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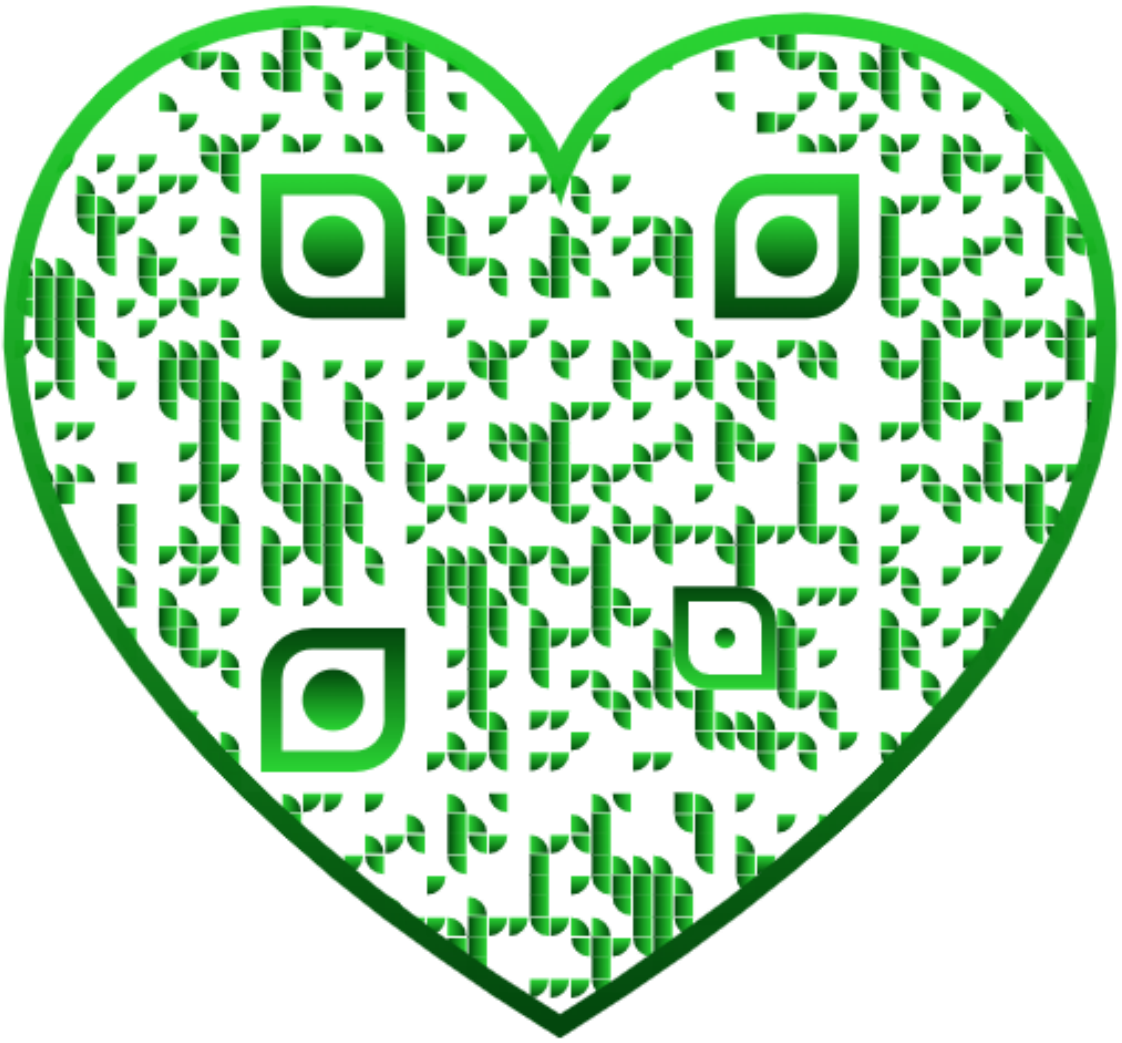

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Getting better all the time...

You know the story. The one about the guitarist who, when complimented by a member of the audience on how good his/her guitar sounds, leans the instrument against the amp, points to it and says, "It doesn't sound so good now, though, does it?" We're not going to go as far as repeating the old cliché that 'tone is in the fingers', but a great guitar tone certainly doesn't come in a can, either. Nor is it a fine wine that only the moneyed elite can obtain or truly appreciate. Everyone can improve the way they sound, and the best news is that it doesn't have to cost the earth to do so. Turn to page 21 to read 50 low-cost tone tips drawn from the *G&B* team's years of live and studio experience and interviews with a panel of household name players – we guarantee you'll find some food for thought.

You'll doubtless also have noticed that this issue of the mag comes bundled with a free 32-page supplement. The Tube Amp Survival Guide is essential reading for valve amp owners – especially those of us who don't know how to make an accurate diagnosis when confronted by the crackles, buzzes and, worst of all, absolute silence that occasionally consigns our beloved boxes full of wire and hot glass to the surgeon's table. As usual, Huw Price comes to the rescue.

And on the subject of tubes, we're now posting regular video demos over on our new YouTube channel, so head to youtube.com/theguitarmagazine and join the party! See you next month...

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Turn to **page 18** to take advantage of this month's special *Guitar & Bass* subscription offer.

In this issue...

MEET THE EXPERTS...

HUW PRICE

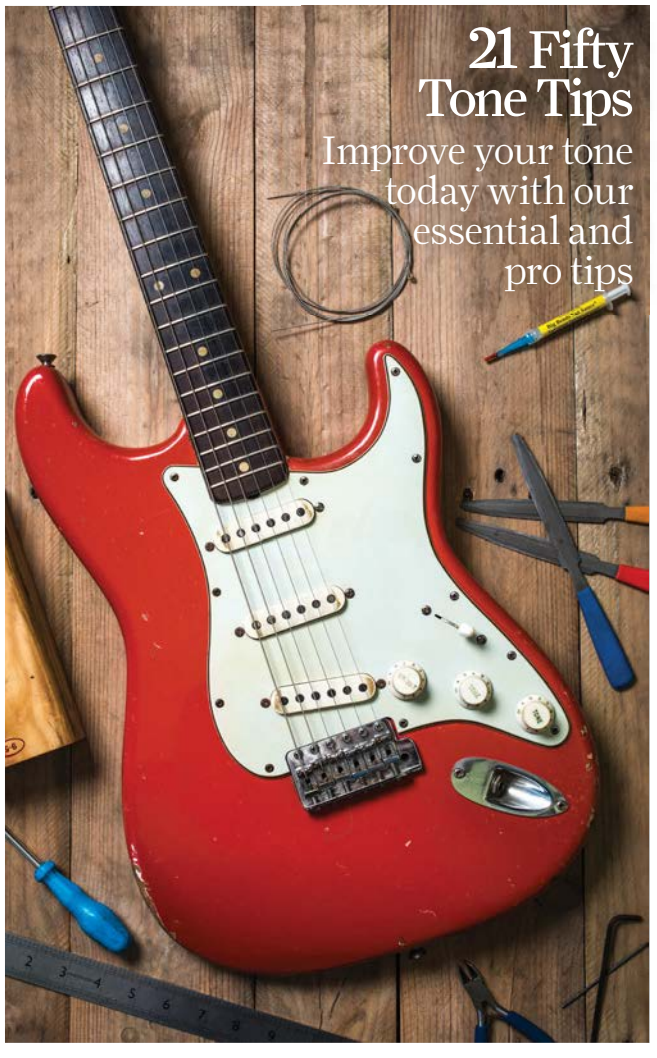
Our senior product specialist spent 16 years as a pro audio engineer, working with the likes of David Bowie, Primal Scream and NIck Cave. His book *Recording Guitar & Bass* was published in 2002. He also builds and maintains guitars, amps and FX.

DAVE HUNTER

Dave Hunter is a writer and musician who has worked in the US and the UK. A former editor of this title, he is the author of *The Guitar Amp Handbook*, *Guitar Effects Pedals*, *Amped* and *The Fender Telecaster*. Check out his column on page 8.

RICHARD PURVIS

A reformed drummer, Richard has been gigging for over 20 years as a guitarist and bassist, and working as a music journalist for almost as long. He also composes music for television, and is legally married to his 1966 Gibson Melody Maker.



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Opening bars...

Emerging talent on *G&B*'s radar and a chance to win three Electro-Harmonix pedals

ONES TO WATCH

Brighton post-rock...

PHORIA

2016 has been something of a breakthrough year for Phoria. The Brighton band, who meld the experimental melancholia of latter-day Radiohead with explosive post-rock moments and swathes of electronica evoking acts such as Aphex Twin and James Blake, unleashed their debut album *Volition* in June. They celebrated its release with show-stealing performances at the Latitude and Bluedot festivals before headlining the second stage at Brighton's Together The People Festival, sharing a bill with Suede and Brian Wilson.

As we drift into autumn, the band are touring Germany, where their star is already in the ascendant. "The album coming out is a big step for us," says guitarist Tim Douglas. "It's not necessarily been hanging over our heads, but we've known for the last couple of years, with the attention we've had, that we need to get an album done. This summer has confirmed we can make the step up we want to, and there's more to come. We go to Germany in October and we'll have a load more dates around then, so hopefully we're going to smash Europe. Next year, who knows?

"The album was being written and mixed for a long while, and it was a really interesting experience. To release your first album, after going through this long process, when you know what you want, was a bizarre and long road with lots of ups and downs, but it's great to get it done and to see people like it, and it getting some momentum. It's been a really enriching experience.

"It was great to play at Latitude because it's a big one, and Bluedot at Jodrell Bank under the massive telescope, really suited us because we're more nerdy than the average band! The reaction has been really nice. It's some of the best audiences and responses we've ever got."

Phoria are very much the product of frontman and co-guitarist Trewin Howard's vision. Afflicted early in life with synaesthesia and a condition that left him with super-sensitive hearing, Howard has a beguiling, fragile voice that has much in common with Thom Yorke's. Douglas admits that single-minded approach presented challenges when mixing *Volition* with producer Laurie Ross.

"A lot of the album was done in a bedroom and then we moved out of there for the final touches and the mixing," he says. "Trewin's vision is very distinct, and we have to follow that, but we all get a say and are on board. It was tricky to try to get a third party, in terms of a producer. It's difficult to agree when the mixes come back and you're saying 'I'm not sure this guy gets it, but he's got this great technical ability, can we bring that in?' There was a lot of 'refining' is the polite way to say it..."

There are challenges, too, in recreating the lush soundscapes of *Volition* live. Hugely inventive drummer Seryn Burden plays an electronic kit, and the mix is awash with synth and keyboard textures.

"It can be tricky, especially with the guitars, because it's not being processed the same way as the synths," says Douglas. "What comes out of the amp is what comes out of the amp. We're juggling with a lot of new amps, pedals and guitars at the moment, and a lot of it is in the touch. Trewin has a very controlled, dynamic touch. The challenge is to replicate that. It's tricky to blend it all together."

Douglas is quick to acknlowedge the influences of Radiohead and Yorke's solo material on Phoria, not just on Howard's vocal style, but his own frenetic and inventive guitar style, too. "Jonny Greenwood is a relevant influence; and this doesn't necessarily translate to the band, but there's something from Hendrix and Omar Rodriguez Lopez from The Mars Volta for me," he says. "There's an abandon in the right hand where you let it go and don't worry too much as long as there's feel and rhythm and you're smashing it! And My Bloody Valentine – that big wash...

"Thom Yorke, too, throughout the band. Some of his guitar work on *The Eraser*, that straight, dynamic interplay between him and the electric drums. I hate to say it, because we always get Radiohead comparisons, but I can see it. Everyone in the band really likes Radiohead, so there's no way around it. Personally, I like being in Phoria, because it's progressive and electronic and organic. The blend of all those things is what I've always wanted to do." **GW**

TRY IF YOU LIKE *Radiohead, James Blake*

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- **AMPLIFIERS** Fender DeVille, Peavey ValveKing

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Q What is the name of the iconic fuzz pedal made by Electro-Harmonix?

A Big Muff **B** Big Tough **C** Big Gruff

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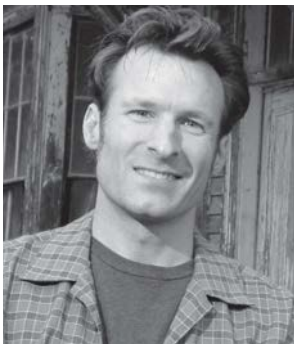
Letters from America

This Amplified Nation creation is a clean-voiced, handwired beauty. **DAVE HUNTER** is walking in a Dumble-inspired Wonderland...



DAVE HUNTER

Dave Hunter is a writer and musician who has worked in the US and the UK. A former editor of this title, he is the author of numerous books including *The Guitar Amp Handbook*, *Guitar Effects Pedals*, *Amped* and *The Fender Telecaster*.

KEY FEATURES

Amplified Nation Wonderland Head & Big Bloom overdrive pedal

- **PRICE** Amp head $2,749 direct; pedal $299 (approx. £2,100 and £228 respectively, excluding any shipping and duties)
- **CONTROLS** Treble, middle, bass, reverb send, reverb return, contour, gain, master; switches for bright, mid and deep boosts
- **OUTPUT** 100W
- **TUBES** 4x 12AX7s, 1x 12AT7, 4x 6L6GCs; solid-state rectification
- **FEATURES** Series effects loop; 4-, 8- and 16-ohm speaker outputs
- **WEIGHT** 44lbs/19.9kg
- **CONTACT** amplifiednation.com

For the past three decades, the tastes of those immersed in the boutique amp scene have seemed to flow in waves. The early drive was mostly for the tweed Fender glories of the late 1950s, while soon after many makers chased the Vox tones of the early 60s. Through much of the 2000s, vintage Marshalls were the hot ticket. And for the 2010s? While all of the above are still popular, it has lately become difficult to keep up with the number of amp makers devoted to the 'Dumble tone'. And few manufacturers deliver a bigger wodge of it for less cash, I would argue, than Amplified Nation.

This small-shop amp, pedal and cabinet maker based in Boston, Massachusetts, was started in 2009 by Taylor Cox, who hand wires a range of largely Dumble-inspired creations himself. Amplified Nation's biggest seller, the Wonderland, however, has a somewhat more circuitous back story in that it isn't based directly on the fabled Dumble model that it seeks to recreate, but is, rather, a take on another notable maker's homage to the form. And what an homage it is. The model name is Cox's play on Dumble's Dumbleland model, of course, noted for its mammoth clean tones, and used by – among others – Stevie Ray Vaughan for much of the *Texas Flood* album.

Think more tangentially, though, and you'll cop the link to a particular megastar – a past Dumble owner, yes, but also the recipient of a rather special signature model from Californian maker Two-Rock, which based its John Mayer Limited Edition on the mighty Custom Reverb model. Cox devoted some study to the original John Mayer amp and, voila! The Wonderland. A twisty road, for sure, but suffice to say it all leads back to Dumble one way or another.

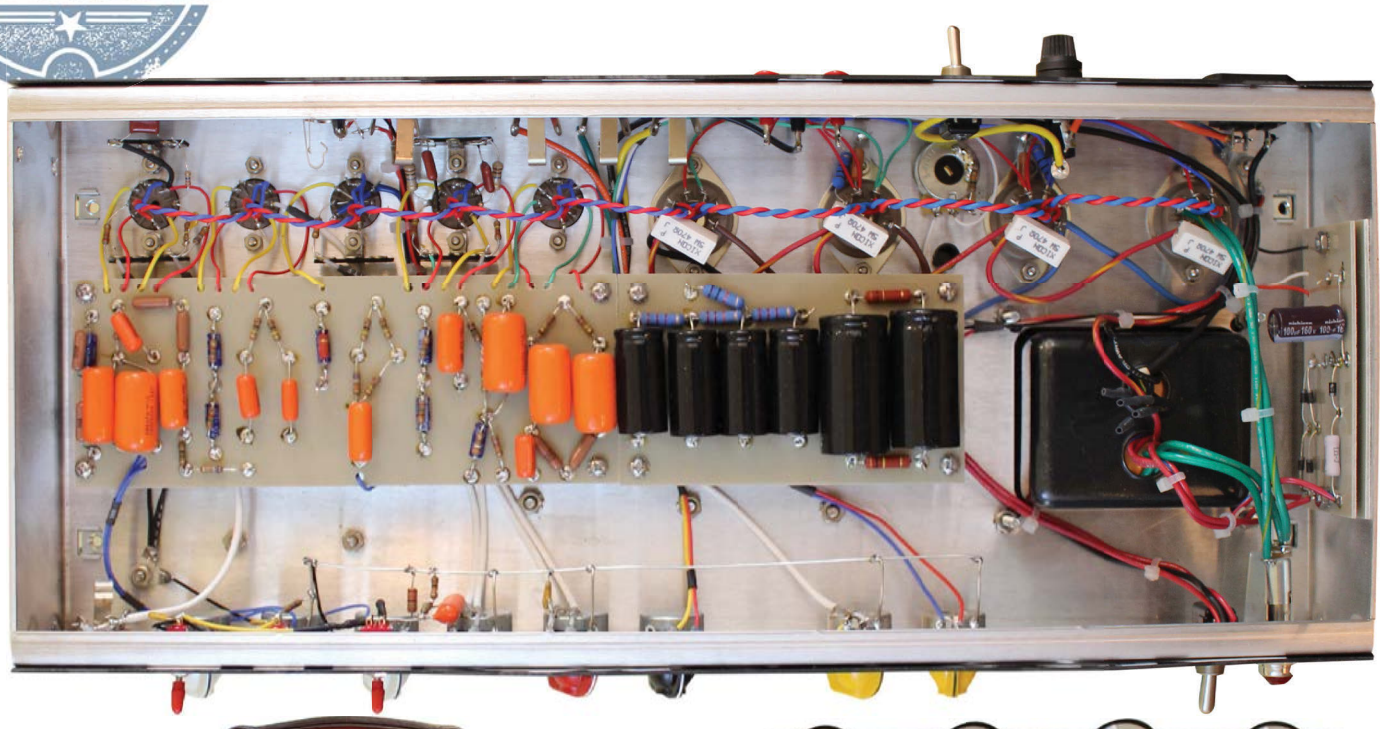
Taking it all back to the original source, then, in the maker's own words: "The Wonderland is a single-channel design, derived from the clean channel of an early-80s 'low plate classic' Dumble. It has some Fender values for components and does have a slight blackface Super Reverb tone to it, but with more midrange." And therein lies the key: whereas we tend to associate Dumbles with that smooth, creamy, saturated lead tone, this one is all about big and clean – but that clean eventually segues into something lusciously rich and tactile, as so many major players have discovered in exploring the other side of Dumble – the aforementioned SRV not least among them.

This one is all about big and clean – but that clean segues into something rich and tactile

It might seem a contradiction in terms, therefore, but it's kind of the exception that proved the rule, too: if Dumbles sound great, then powerful clean-voiced Dumbles sound greatest of all!

Amplified Nation's Wonderland is available in 50-watt and 100-watt renditions (the latter is on test here), built around two and four 6L6GCs respectively. The front panel is pretty straightforward, although not without plenty of sound-sculpting potential. The three-knob treble, middle, bass tone stack rides right up at the front end, which is exactly where it occurs in such circuits (Fender's blackface and silverface amps might run their volume controls first, but the signal actually passes through all the tone pots and associated components before being routed back to that volume pot). The two-knob reverb section – a complex, three-tube circuit – has controls for both send and return, so you can govern both how hard you hit it and how much reverb ends up in the final mix. The contour control is a wide-band sweep that is flat at noon, then increases low end while reducing high end as you roll it anticlockwise, while doing the opposite when you sweep it clockwise, with the intention of providing an overall voicing control that lets you adjust for different guitars without changing your fundamental EQ settings. The gain and master do as you'd expect. Perhaps most dramatic are the three mini-toggle boost switches – bright, middle and deep – which have the potential to dramatically reshape the amp's range.

Amplified Nation's construction quality is first



rate. Inside the box, a thick epoxy board is hand-soldered with expensive F&T electrolytic capacitors, Orange Drop 6PS signal caps (a lesser-seen polyester variant that Dumble often favoured) and other high-end gubbins. The workmanship inside is outstanding, as is that of the familiarly D-style cabinet outside, which is covered in genuine suede in a toothsome deep-pink hue (aka 'watermelon').

On one hand, you're thinking at this point that you'd also like a taste of that fabled Dumble overdrive sound, right? Yet perhaps you're also relishing the Wonderland as an ideal pedal platform? Such is Cox's intention in also sending us his Big Bloom pedal, a versatile D-in-a-box overdrive that is not only intended to partner brilliantly with the Wonderland, but to interact with any good clean or semi-driven tube amp, too. Its drive and volume controls are self-explanatory: tone rolls off highs, while accent is a presence control of sorts. The rock/jazz switch, a feature found on many Dumble amps (although not the one that inspired this Wonderland), toggles between a snarlier and edgier sound, and one that's warmer and smoother. Let's plug into the amp itself first, then try it with the Big Bloom injected.

Tested with a Rocketfire vintage S-style, a Gibson 1959 Les Paul reissue and a korina-bodied Heatley Parisienne with vintage 1959 Gibson P-90s, the Wonderland proved a heady and versatile delight. The core of this thing is found in its rich, shimmering cleans, certainly, but those are far more sculptable than the tired 'clean' label usually implies. Between the tone section, the contour knob and the three boost switches, there's an impressive range of voices on tap here – but rather than using the facilities to ape different templates, I most enjoyed dialling in each test guitar to its 'perfect self', if you will, finding that sweet spot that really let the Les Paul, the S-type and the P-90 rocker sing with depth, dynamics, and authority. And that three-tube reverb? Oh yeah, it's delectably swirly and dimensional, and always feels foundational and essential, rather than something lashed on top as an 'effect'.

Advance the gain and the Wonderland will push into light breakup, which adds great texture to both the tone and the feel. Note that this master isn't of the sort that you simply rein in to induce quicker front-end breakup, though, and you need to get the amp loud and proud before it gives in at all (that, or use a good attenuator). All in all, it's a mighty alternative for players who might otherwise look toward a Fender Twin Reverb or even a 100-watt Hiwatt to lovingly pummel their audience.

Here, of course, is where the Big Bloom comes in. From light OD with that famously smooth character, to the hairier, more raw-edged distortion sometimes heard in a cranked Dumble HRM model, this is an extremely playable pedal that should suit a lot of playing styles. I far preferred the rock setting (finding jazz a little dull and constrained), where I dug the reedy lead tone, easy feedback and nifty note flipping it induced (with a held note shifting magically from fundamental to harmonic). Put the pair together and it's a powerful package, but each impresses mightily on its own.

The Amplified Nation Wonderland and the company's Big Bloom overdrive pedal are a heady partnership

READER BOARDS

GARY LAW has five albums under his belt as lead guitarist in Stiff Kittens. He tells us which pedals are essential to his sound...

KIT LIST

Gary Law

- **PEDALS** Board 1: Boss TU-2 Tuner, Boss BD-2 Blues Driver, MXR Micro Amp, MXR Phase 90, Boss CE-5 Chorus Ensemble, Mooer Reecho. Board 2: Boss RC-1 Loop Station, Boss BF-2 Flanger, Boss TR-2 Tremolo
- **PATCH CABLES** Standard Roland patch leads
- **POWER SUPPLY** Boss 9V power supply
- **BOARD TYPE** Boss BCB-60
- **HEAR IT HERE** Soundcloud.com/gary-law1/09-track-09

What inspired this setup?
"I've been the singer and lead guitarist in a band called Stiff Kittens since the 90s. We started primarily as a covers band, but we always wrote our own songs and snuck them into our set. It ended up 70/30 originals/covers. We've recorded five albums and are writing our sixth."

Tell us a little about the journey...
"I put this particular setup together because my old one was getting unreliable. I always loved the sound of the Boss Blues Driver, as it gives a good gritty overdrive sound, but it also sounds good when I'm playing chordy Oasis-type stuff too, so after a tuner that's my first pedal. Next comes an MXR Micro Amp that's used as a booster for solos. After that, I've got an MXR phaser and an old Boss Chorus Ensemble pedal, which is about 20 years old. It's a great effect that really colours the sound whether it's clean or distorted. Last in line is a great little Mooer delay pedal. It's got three different settings, including tape echo for those U2 moments. I've also got another little board that I use in the effects loop on my amp to colour the sound with a Boss Loop Station on it, which I'm learning to use very slowly. Finally, there is a Boss Flanger and Tremolo, which are both as old as the hills."

Is there another pedal that you are looking to add?
"I'd like an old DigiTech Whammy pedal. I had the second version, which was good, but it wasn't easy to program."

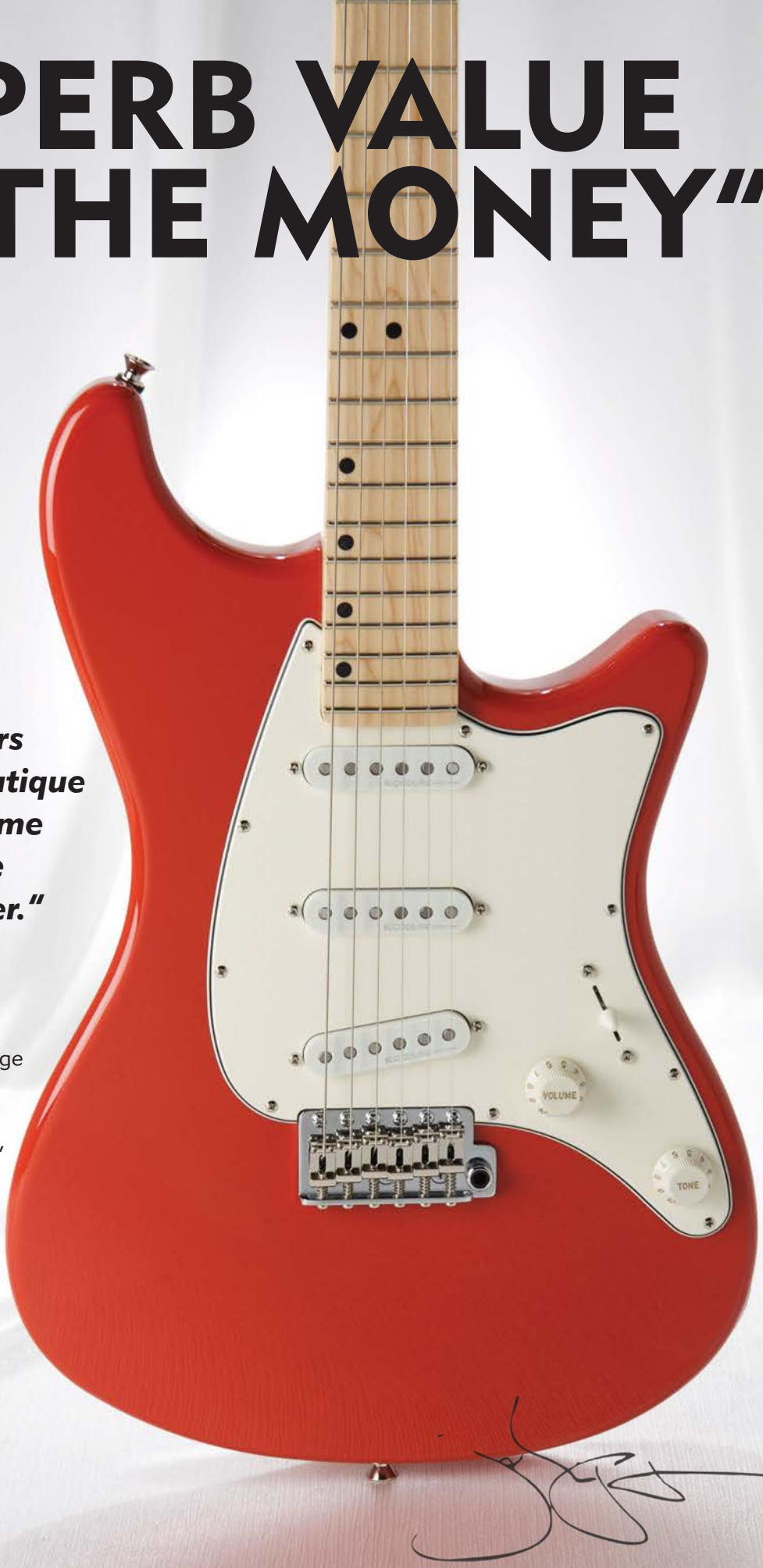
What guitars and amps do you use with this board?
"I use a 1988 Gibson Les Paul and a Takamine EN50c acoustic into a Marshall 2500MGFX stereo combo."

What lessons have you learned along the way?
"If there's anything I've picked up over the years it's not to over-complicate your sound. I took ages to find the right pedal for me, which is the Blues Driver. Anything else is just a colour to that sound. I'm always on the look-out for something new that makes my ears prick up, though. Because we were a busy live band, we had to be versatile, but we had to be quick with our setup, too, and as we're always writing new songs, I always have a dictaphone handy just to get ideas down."

Guitar & Bass SHOW US YOUR BOARD

To be in with a chance of seeing your pedalboard in the mag, email the details and an image to **guitarandbass@anthem-publishing.com**

"SUPERB VALUE FOR THE MONEY"



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JARRAD OWENS

- **TEST INSTRUMENT** PRS S2 Vela (McCarty Tobacco Sunburst)
- **BANDS** Maniac Street Preachers, Supernova (electric duo), Acoustix (acoustic duo)
- **MAIN PEDALS & AMPS USED** Peavey ValveKing 112, Peavey 6505 Plus 112, Randall RD5 (Maniac Street Preachers amps, dependant on venue), Line 6 Amplifi FX100 (Supernova)
- **SESSIONS SO FAR** Wannasee tribute festival

TEST PILOTS PRS S2 VELA

JARRAD OWENS takes to the festival circuit with his Manics tribute band. Will the Vela prove to be a Design For Life?

After three months of ownership, the PRS S2 Vela had managed to bowl over a self-confessed vintage guitar nerd; now it was time for it to prove itself in one of the most demanding situations any guitarist faces – the festival appearance.

The great British festival is a chance for hard-working bands to play to a more diverse audience – usually up to their knees in mud. It's a challenge at the best of times, but factor in a new guitar and an amp provided by the festival tech crew and you've really upped the ante.

Having travelled the length of the UK and had one of our convoy break down en route, we were hoping our backline would enable us to accurately recreate the sound of the Manic Street Preachers. Happily, at the Wannasee tribute band festival the guitar and amp combination was a dream, with a Marshall JCM900 stack being provided for me.

As we were the opening band and had an extra-long soundcheck, I had the rare opportunity to run the Vela through another amp in the backline: an early-70s Vox AC30.

The Vox really brought out the Vela's clarity, showcasing the bridge pickup's indie-friendly jangle. The neck pickup sounded, dare I say, as Gretsch as Gretsch can be, with a warm round tone that oozed early-50s Nashville. The cranked AC30 with the bridge humbucker brought out the fabled Vox crunch – a glorious tone that could only be bettered with the addition of a treble booster!

At gig time, it was straight through the JCM900 – no effects, no tricks. I used the PRS for most of the set, from the steady powerchord chug of *Suicide Is Painless* to the spacious open chords of *If You Tolerate This Your Children Will Be Next*.

Using the volume, tone and coil split alone, I could ease all of the necessary rhythm sounds from the Vela, going full bore with the bridge humbucker for the earlier punky hits and rolling off the volume for the mellower tones. The PRS's ability to retain clarity with the volume rolled back, coupled with the well-balanced output on both pickups, made for a very intuitive experience.

I move around a lot on stage, like Richey Edwards. Star jumps, pogoing and posing are a necessity, so the PRS was swung around a lot. With an energetic performance comes compromised tuning stability, and the combination of jumping around and heavy-gauge plectrums meant the PRS required a tune-up every two or three songs. The guitar is strung up with a D'Addario EXL set, so I'm going to change over to NYXL like on my usual stage guitar, a '72 Thinline Tele.

Following the show, the sound guys remarked on how well the PRS sat in the mix front of house, and even my band mates noticed through the chaotic monitor mix. Having played mainly Teles and Les Pauls on the live scene, I'm very much a traditionalist... but this traditionalist is rapidly becoming a PRS convert.

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SOUNDTRACK OF MY LIFE

Simon Townshend

The Who guitarist tells *G&B* about the records he grew up listening to

Simon Townshend has been recording music since the age of nine, when he was enlisted by older brother Pete to contribute vocals to The Who's rock opera, *Tommy*. A multi-instrumentalist and vocalist, he's released eight solo albums and another with the band Casbah Club. After a stint with The Who in 1996, Townshend rejoined them in 2002 and has been a full touring member ever since. He's also performed alongside Jeff Beck, Pearl Jam and Dave Grohl.

Innervisions
STEVIE WONDER

"To me, he was the greatest. He influenced me in so many ways, and the fact that he's blind blows me away. He's multi-talented and he writes the most incredible lyrics. When I was younger, I was listening to a lot of singer-songwriter stuff, and Stevie was just the man for me – and he played the drums on this record, too, which is mindblowing!"

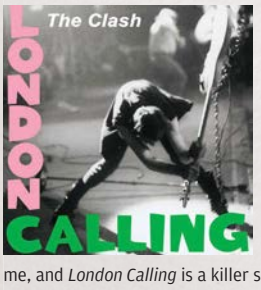
Peter Gabriel
PETER GABRIEL

"What appealed to me mostly about him was the mystique. He put himself behind a screen, and I love that mystery. His voice is so incredible and I love the way he used it. That inspired me a little bit to learn to sing properly, and I had vocal lessons after hearing his first solo album because I realised I wasn't breathing properly. A lot of people say I've got a bit of Peter Gabriel in my voice."

The Jimi Hendrix Experience
ARE YOU EXPERIENCED

"I don't think of myself as a musician, I think of myself as an artist. I use guitar to express myself as a writer. Hendrix did both – wrote great music and played it with a fire behind what he did. I just wish I'd had the chance to see him. My brother, Paul, received about 200 albums for Christmas from Pete as a gift and this was one of them. We first heard it in Paul's bedroom."

London Calling
THE CLASH



"Punk came along and slapped everyone around the face, and The Clash were the best of the bunch. Joe Strummer was an incredible lyricist. The rhythm section were shit-hot, too. That was a life-changing album for me, and *London Calling* is a killer song. Being a London boy, it meant a lot to me and all my friends. We're all from West London – and we all lived by the river..."

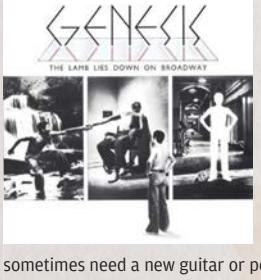
The Jam
SETTING SONS

"I love both *Setting Sons* and *All Mod Cons*, but if I look at the grooves, and see what's worn more, it's *Setting Sons*. Paul Weller's a better guitarist than people realise, too. He keeps his riffs really tight and crisp and is a true frontman. He supported us last year at Hyde Park and it was fantastic hanging out with him and getting to know him."

The Who
WHO'S NEXT

"I first heard this when I was 11 at the Young Vic when they played it there for the first time. I was blown away by the sequencers and the way the guitar worked off the sequencers. That was their best album for me. I was at school and I remember hearing *Won't Get Fooled Again* on the radio in the janitor's office, standing with my head round the door going 'that's my brother!'."

Genesis
THE LAMB LIES DOWN ON BROADWAY

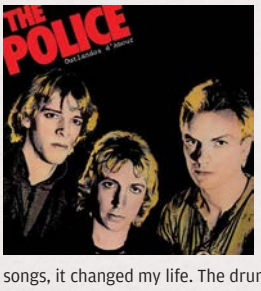


"There's something about the dark synthesis of this album I love, and it inspired me for a while when I was doing a lot of synth stuff. On the other side of that are the syncopated delays I love on that record. As a writer, you sometimes need a new guitar or pedal to get you going again if you get stagnant, and this album helped me at a time when I wasn't writing."

Bob Marley
LEGEND

"I love this album and play it all the time. I bought a new turntable a few years ago, and this has been stuck to it ever since. It's a great-sounding album and all of the tracks were put down live, and you can really feel that. Bob Marley's music is so appealing and he knew how to turn us on. The songwriting on *Legend* is just universal songwriting. I adore it."

The Police
OUTLANDOS D'AMOUR



"For a band of just bass, drums and guitar they made an immense sound. It was the start of a new wave, a little after The Clash, that the police broke into my life. *Message In A Bottle*, *Can't Stand Losing You*, all those songs, it changed my life. The drumming on this became really important in music – we were all influenced by Copeland, and Sting, what a talented guy."

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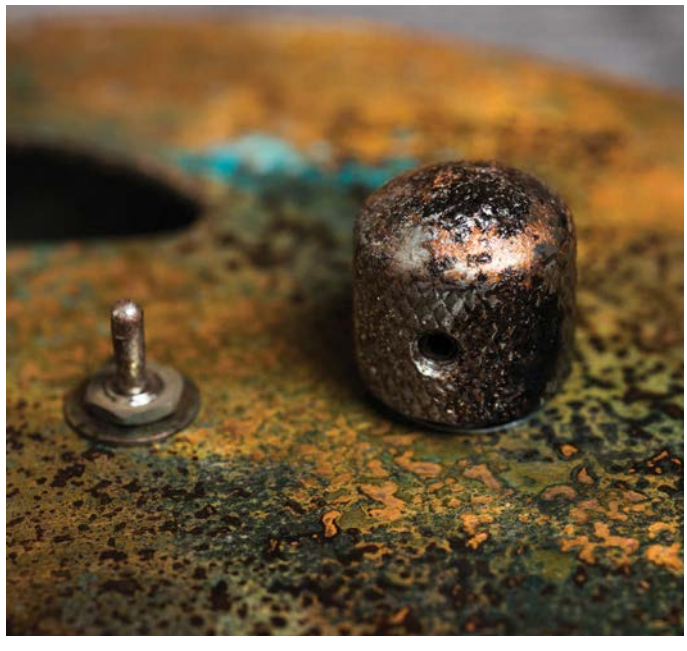

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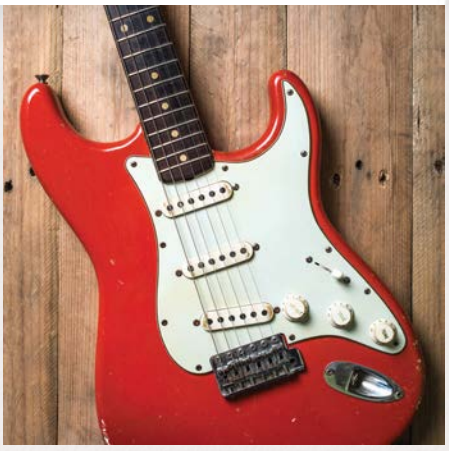
Story **Chris Vinnicombe**



1 EXPAND YOUR MIND

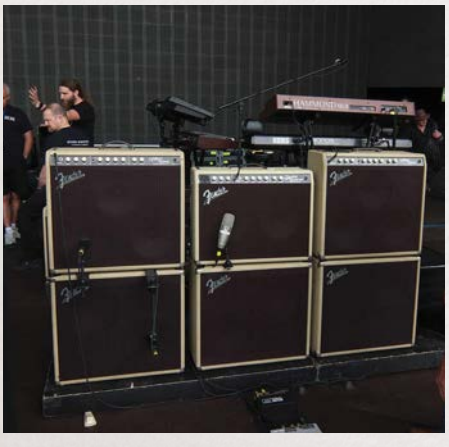
Guthrie Govan says: "We all find ourselves feeling devoid of inspiration from time to time: even if you have the most finely honed ear imaginable, there might be times when you just can't think of anything worth playing. This dilemma can be addressed by simply expanding your listening diet: by constantly seeking out fresh music and trying to listen to it actively and intelligently, you'll absorb all kinds of new phrasing ideas on a subconscious level, and aspects of this will start to emerge in your playing, keeping things sounding reassuringly fresh. This is essentially a musical version of the old adage: 'you are what you eat'!"

2 NO FX!

Any additional cabling will introduce extra capacitance, which in turn contributes to high-end roll off. Try plugging a quality lead straight into your amp and compare it to the sound with your pedals or pedalboard in the chain. With the right amp and a treble bleed circuit (see tip 19) you can get plenty of clean and dirty mileage out of your guitar's volume control. Bluesman *du jour* JD Simo agrees: "I'm a minimalist. I am actually inspired more by limitations than by options. It's about using the volume and the tone controls [on the guitar] and trying to play with dynamics. The organic, simple approach inspires me."

3 FATTEN THAT STRAT

Leo wanted his guitars to deliver the shimmering, pedal steel-like highs of Western Swing, and vintage-style Strats still come wired without a bridge pickup tone control. Tastes have evolved and this simple mod transforms the versatility of the Strat bridge pickup, giving you access to humbucker-like tones, especially in combination with mid-rich drive: locate the wire that connects the second tone pot to the switch and solder a short section of wire between that tag and the next tag along towards the middle of the switch. Your rear tone control now rolls off highs from your bridge pickup, too. It's a rocking secret weapon.



4 BACKLINE OF BEST FIT

Big gig, big amp. Small gig, small amp. Right? Not necessarily, and it all depends on how clean you need your tone to be. Often at small gigs you'll be unmic'd in the corner of a pub with no monitoring, so if you want a fighting chance of keeping your tone squeaky clean and audible over a loud drummer you'll need to think about using an amp packing at least 30 watts. If you don't need a loud clean tone you might be able to get away with cranking up a 15- or 18-watter, and you'll sound all the more glorious for it. Move up to a large club with a proper PA and it's a different story: you can forget about the soundman letting you crank that 30-watt amp for a start, but you might find that decent monitoring allows you to mic up a smaller amp operating at its sweet spot. When it comes to perceived volume, speaker efficiency plays its part (see tip 6), as does the position of your amp (see tip 8). And then you play on a big outdoor stage at a festival and suddenly find that the amp that's deafening in a pub sounds like a practice combo and you wish you had a wall of stacks. Don't worry, you probably haven't had a soundcheck and the soundman is almost certainly mixing the rhythm guitar channel higher than your solo, rendering it inaudible.

5 FITTER, HAPPIER

Whether it's hand position or overall posture, the majority of us have bad habits as guitar players that, if unchecked, could ultimately lead to us struggling to play the instrument at all, let alone achieve a great tone. And we're not talking about the kind of habits that involve supporting illegal economies in South America, either. If the old 'tone is in the fingers' cliché holds true, it makes sense to look after those digits, right?

Virtuoso acoustic player Jon Gomm: "There are two elements to this: one is your hands and wrists, the other is posture. Every time I play guitar or do a gig, afterwards I stretch. I have five or six stretches on each hand, my fingers, palms and tendons from my forearms through to my fingers. That's how you avoid getting injured. It [guitar playing] is an unnatural activity and not very good for you. Nearly 15 years ago, I had tendonitis in my shoulder and had to have surgery.

"Since then, as you might expect, I've been very careful about stretching and posture. If you're worried about your posture or get any kind of pain, discomfort or numbness you need to find out what's wrong with your posture, the sooner the better. Don't take it lightly, I've been there and it's not great."

6 MISTER SPEAKER

Despite the voodoo ascribed to NOS valves, the influence of your choice of speaker on your guitar tone is a much bigger part of the aural equation. The right speaker won't just make you sound better, it can also better match your volume to your environment. If you need more grunt to compete with a hamfisted oaf of a drummer, try something super-efficient such as an Eminence Red Fang (102.5 dB). Conversely, a much less efficient ceramic driver such as a Jensen C12N (98.4 dB) or Celestion G12M Greenback (98 dB) will allow you to work your amp harder without incurring the wrath of sound engineers or your bandmates...

7 THE SINGLE LIFE

Jazz players aside, who needs neck pickups? Luther Perkins, Leslie West, the Reverend Billy F Gibbons, Johnny Thunders, Eddie Van Halen and Billie Joe Armstrong have all enjoyed the visceral thrill of a single bridge-pickup electric guitar over the years, and you should give it a whirl, too. There's something incredibly liberating about playing a Gibson Les Paul Junior or Fender Esquire in anger and there's even a scientific explanation for why they sound and respond differently to their twin-pickup siblings. The abscence of a neck or middle pickup means there's less magnetic pull exerted on the strings, which means you get longer sustain, more resonance and fewer tuning issues in exchange for your hard-earned. Don't believe us? Try comparing the way an otherwise identical Tele and Esquire (or LP Junior and Special) sound and feel – you will likely be able to perceive a difference acoustically, and this will become marked when you plug in.

It isn't limiting musically, either: after a while you'll find that you can coax warm, neck pickup-style sounds out of the instrument simply by varying the attack and position of your picking hand. The difference between picking hard down at the bridge and softly near the neck with the fleshy part of your fingers is dramatic.

8 UP OR DOWN?

When it comes to optimum cabinet position onstage, opinions differ. Some people use a stand to bring the speakers closer to head height, others enjoy the way the coupling effect with the stage reinforces bass frequencies. Some players love the three-dimensional acoustic properties of open-back pine cabs; others prefer a heavy, closed-back ply cabinet that keeps bass tight and defined and has a laser-like directional quality. Inspired by Link Wray, Black Key Dan Auerbach turns his amps sideways: "He had the amps turned away from the audience, because if they faced them it would have blasted everyone's ears. I tried it, and it sounded so much better." Experiment!

9 BASS YOURSELF

As any bass player will tell you, guitarists can learn an awful lot from bassists. A good bass player knows that the kick and snare drum are their twin gods and that locking in with the drummer – even to the extent of mirroring the way they accent drum fills – makes for a tight-sounding performance or recording. A stint playing with a band in a bassist's shoes can work wonders for a guitarist's timing, and in turn your tone when you return to the guitar. Simple things played well and in time will always sound better, and get you more gigs, than sloppy histrionics. It'll help you learn when to lay back or push against the beat, too.

10 PATCH THINGS UP

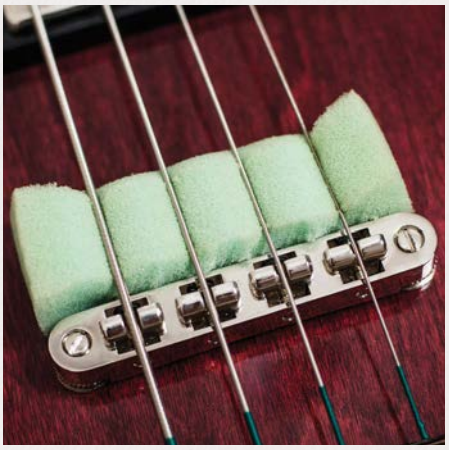
Assuming you've ignored tip 2 and decided to persevere with pedals, high-quality patch cables will go some way towards reducing high-end roll off and saving the potential embarrassment caused by your signal being reduced to crackles and splutters during a vital – or indeed any – moment of your live set. Serial pedal-flippers may consider the virtues of the expensive but excellent Lava Mini Coils (£14 each), which don't commit you to a precise length and look and sound great. We also like the cheap but low-profile and relatively robust Hosa pancakes (less than £5 each on eBay). Try to avoid anything with a moulded plug. >

11 BE A TOP WRAP ARTIST

Joe Bonamassa does it, Billy Gibbons does it, and if you've got a Les Paul Standard – or any guitar with a tune-o-matic bridge and stopbar tailpiece for that matter – you can do it, too. Instead of threading the strings through the back of your tailpiece in the traditional manner, thread them in from the front and wrap them back over the top. We think it gives Gibsons a slinkier feel, and Bonamassa swears that it makes a set of 11s feel like a set of 10.5s. It also allows you to screw that tailpiece right down for maximum resonance without creating a break angle over the saddles that's too steep, thus risking string breakages.

12 SLAP HAPPY

Slapback delay isn't only for 1950s rock 'n' rollers and bequiffed rockabilly rebels. Adding a short, always-on slapback echo to the end of your effects chain or in your effects loop can give your sound a more three-dimensional quality. Keep your settings restrained, so it's more a case of 'you only notice when it's switched off' rather than an audible special effect, and it'll help enliven your sound in an acoustically dead space. It also works brilliantly as a 'thickener' if you're the only electric guitarist in your band. Some players like the treble roll-off of an analogue unit, while others prefer the crispness of a digital delay – the choice is yours.



13 FOAM PARTY

If you prefer the feel of round-wound strings to flats but are looking to achieve a more old-school, upright-style thump from your electric bass, then lightly dampening your strings down at the bridge is a quick and easy fix. Although a variety of solutions are commercially available, we've had great results using a piece of soft foam or sponge dish scourer cut to size. Simply keep trimming and experiment with position until you get the desired sound: the tension of the strings will hold the foam in place even in sweaty gig conditions. Funk Brother Bob Babbitt used this method, and he knew a thing or two.

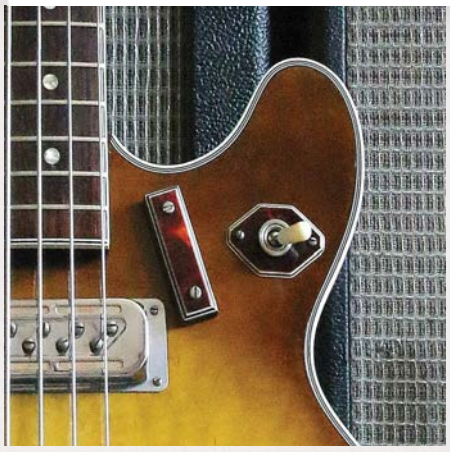
14 ALL ABOUT THE MONEY

In a full-band recording, acoustic guitar rhythm tracks are often used as much for their textural, percussive quality as the actual chord shapes being played. To accentuate this, try the 'Johnny Cash trick' that the Man In Black used with Luther Perkins (electric guitar) and Marshall Grant (upright bass) before the arrival of drummer WS Holland in 1960 expanded his backing band The Tennessee Two into The Tennessee Three. Thread a bank note (make it an American dollar bill for added authenticity... or a $100 bill if you are a flash bastard) between the strings around the 12th fret or down by the bridge, as per the picture below. Simply strum your acoustic like a train for a snare-like rattle that works brilliantly for early rock 'n' roll and gives stripped-down acoustic sessions more of a rhythmic element. It also looks extremely cool, and if anyone wonders what you are doing you can just look them in the eye, shrug your shoulders and say, "Johnny Cash did it". If it was good enough for him...

Strum your acoustic like a train for a snare-like rattle

15 RIP UP THE RULEBOOK

We've said it before, and we'll say it again. If it sounds good, it is good. Biffy Clyro's Simon Neil describes working with producer Rich Costey on the band's recent album *Ellipsis*: "I wasn't above doing anything weird. There were points where Rich would have my guitar going through 16 pedals. We wouldn't even know which ones were switched on. Rich is a bit of a vibe merchant. He doesn't worry if things are over-distorted or if the needle is in the red. It's all about the sound. Whenever we were saying, 'Oh the needle's in the red there', he'd be like, 'Who gives a shit? Does it sound good or not?' And that was a really good mindset."



16 THE SIMPLE LIFE

Something simple, played well, is always more impressive and toneful than over-reaching and fluffing it. That's not to say that you shouldn't push yourself out of your comfort zone and take risks as a player, but in the context of a gig or a blues jam, try playing fewer notes and leave breathing space between phrases. And always stay out of the way of the lead vocal. Endless flurries are tiresome listening for the audience and dilute the impact of any fireworks you do throw in. Approach a guitar solo as if you are telling a joke or short story: avoid meandering, build to a climax and don't reveal the punchline too early!

17 OLD STRINGS ATTACHED

We've encountered producers who refuse to record guitars that don't have fresh strings on them, and The Edge apparently insists on a new set on each of his 20-plus touring guitars every single night. For most electric guitar applications, we tend to prefer a spanking new set that have been thoroughly stretched in, but on basses and acoustics, it's a different story. Brand-new strings can introduce nasty clanks and top-end zing that can cause problems later in the mix. We always prefer the warmer sound of played-in acoustic strings, while legend has it that James Jamerson never changed his bass strings unless they broke. He sounded pretty good.

18 STACK 'EM UP, PUNK

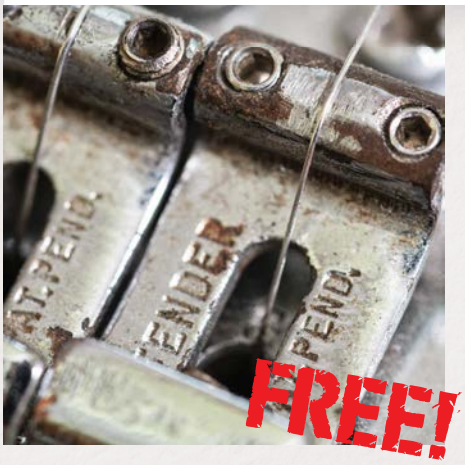
If you rely on pedals for overdrive, try using two at the same time. If you can find a combination of drive pedals that play nicely together, then it's a quick and easy way to maximise the versatility of your rig without shelling out for additional dirtboxes. Running a TS Mini Tube Screamer (set to a medium gain level) and J Rockett Archer Ikon (set as a clean boost) into a clean-ish amp, as per the picture above, gives you four distinct gears: the pure sound of the amp itself, a boosted amp tone (Archer only), a dirtier crunch tone (Tube Screamer only) and a harmonically rich lead tone with plenty of sustain (both pedals on). As usual, experimentation is key...

19 LET IT BLEED

Although 'cleans up nicely with your guitar's volume control' has become as much of a guitar journalism cliché as 'plays like butter' or 'the dusty end', the reality is that many instruments muddy up when you roll back the volume, limiting the mileage of plugging straight in to an overdriven amp and using your guitar's controls to regulate drive (see tip 2). The answer is a simple mod known as a treble bleed circuit that involves wiring a capacitor (typically between 680-1,000pF) between the input and output lugs on your guitar's volume pot. Some also wire a resistor (typically 150k for a 250k pot or 330k for a 500k pot) in parallel. Bluesman Dan Patlansky explains the appeal: "It's a cheap thing to do, but you can get so many different textures. Every notch of the volume knob has completely different tonal textures. The lower my volume goes, the more jangly my sound becomes because of the capacitor. On a standard Strat, when you pull the volume back the sound becomes muffled as if the top end has been shaved off. As soon as you put on a capacitor and you take your volume down, it starts to bleed treble back into the circuit, so you get more of a silvery texture. Just in your volume knob, there is a world of different textures. It's endless."

20 THE GREAT OUTDOORS

As we alluded to in tip 4, when it comes to outdoor gigs, even at major festivals, all bets are off. A light breeze can make your sound wash in and out as if you've employed an extra modulation effect set to an 'underwater' preset, and your normally very loud amp will suddenly seem underpowered to the extent that you might think something's wrong with it. Don't panic, but when you venture into the wild, we'd heartily recommend packing the amp you own that has the most headroom. Even small one-day festivals often have hired backline available for use (typically a modern Marshall or Fender Twin), and it'll likely be louder and more stage-filling than your pub-friendly combo. It's not the worst idea to have a 'festival board' equipped with a couple of extra dirtboxes so that you can quickly get close to your preferred sound through any loud clean channel. If you don't have to bring an amp, it will make changeovers quicker (popular with festival crew) and load-ins easier (popular with your spine). If you don't use many pedals, consider a rechargeable power supply such as Pedaltrain's Volto (£89) for your pedalboard as added insurance, just in case there are no power points close to the front of the stage. And don't forget to charge it!



21 RAISIN' SADDLES

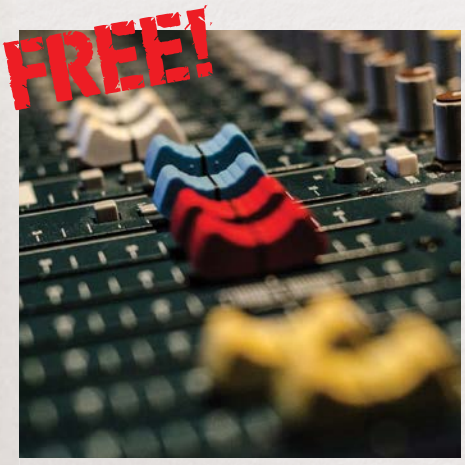
The pursuit of a low action can inhibit string vibration and lead to choking out. Resist the temptation of an easy ride and try a setup with a slighly higher action than you'd usually go for: you'll find that the strings resonate more freely, sustain for longer and chords and single notes sound better. Once you've got used to the extra 'fight' required from the fretting hand, you'll also be able to 'dig in' under the strings a little more when bending. The whole playing experience becomes more expressive and if you dabble with slide, you might even find that your action is now high enough to negate the need for a separate guitar for bottleneck duties.

22 SPRING WATCH

Name-players as stylistically disaparate as Johnny Marr and Joe Bonamassa are fans of old-fashioned spring reverb as an always-on effect in the recording studio. For Bonamassa, it's an essential component of his studio toolkit: "There's always a reverb tank. I use one of the brown Fender spring reverbs, but you can use a brown or a blackface one. A reissue is fine, they all sound the same. I use a reverb tank because I like the chime that it gives, and the microphone in the studio doesn't hear the reverb as much as live. Live, you're swimming! I always leave the reverb on a little bit and it just gives it a nice sheen."

23 THINK LIKE A SINGER

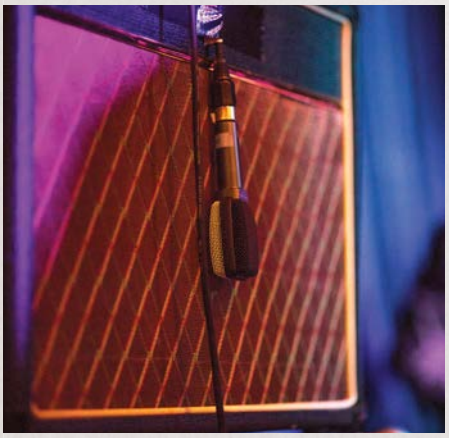
And we don't mean turn up late or refuse to carry any equipment during the load-in. As discussed in tip 16, simple melodies are usually much more memorable and toneful than unnecessarily complex ones, even in the polyrhythmic world of prog-metal, as Dream Theater's John Petrucci acknowledges: "I approach [melody lines] like a singer would. I'm a lyricist, so I'm constantly writing vocal melodies. The melodic ins and outs of chord progressions are always at the forefront of my thinking, so when I'm playing guitar in songs where it's really the voice, I'm almost singing it to myself and it comes out of the guitar."



24 DON'T BE PRECIOUS

You might have spent a small fortune on a pedalboard overflowing with boutique stompboxes and honed your rig to perfection, but live performance and volume are the great levellers. What sounds full and rich at home often won't cut through a crowded midrange, especially if your band has a second guitarist, keys player or horn section. The worst thing you can do at this point is to keep turning your amp's volume control up – think of the overall mix as a layer cake and accentuate the upper-midrange frequencies where the electric guitar is most at home. Don't be wedded to a particular pickup choice, either, just because it sounds right in isolation – it's about making your tone work in the context of the band and the room you are in. If you have the luxury of a soundcheck, it's well worth stepping out into the area where most of the audience will be standing to hear the front of house mix from their perspective. You might be surprised!

It's about making your tone work in the context of the band



25 A SHURE THANG?

The Shure SM57 (£91) has been the industry standard live and studio mic for guitar speaker cabinets for many years now. It's great for capturing aggressive rock tones, but you might find that a different mic better suits your purposes. Dynamic mics with high SPL handling are generally the best option in the cut and thrust of a loud stage environment, but for quieter gigs and studio recording, ribbon and condenser units – or even a combination of two or three different mic types – may better capture the subtleties of your performance and offer a smoother, more 3D representation of the sound coming out of the cabinet. Experiment with angles and proximity, too. Affordable alternatives to the 57 include the Sontronics Halo (£129) Sennheiser e609 (£89) and the Audio Technica MB 2k (£45). The Beatles achieved a reasonable degree of success in the studio with large-diaphragm Neumann U47 condensers positioned between a foot and 18 inches away from the amp – according to engineer Geoff Emerick: "where it sounded good" during *Revolver* sessions. If you're chasing the sound on more of a budget, an 'affordable' soundalike is the Peluso 22 47, for a still eye-watering £1,299. Yikes.

PRO TIP!

26 STRING THEORY

How far would we get without strings? Not very. It's an intensely subjective area and there are several examples of legendary players who created massive signature guitar tones with very light strings – Brian May, Billy Gibbons and Tony Iommi to name three – with Gibbons going as low as .007 on his Dunlop Rev Willy's Mexican Lottery Brand signature sets. Generally speaking, we prefer the sound and feel of a set of (at least) .010 or .011 gauge strings on electric and .012s or 0.013s on acoustic. Try going up a gauge – you may need to tighten your truss rod a quarter turn to compensate – and see if you enjoy the extra physical and tonal girth.

27 GO TO EXTREMES

When setting your amp EQ, listen with your ears and not your eyes. Don't be afraid to set the controls in a way that looks unusual, even if this involves rolling off the bass and maxing out the mids. Amps have their own individual voicings and quirks and are best regarded as instruments in their own right – you should always ensure that you adjust the EQ at the volume at which you are playing and not default to bedroom-friendly settings in a band mix. At volume, you are better off with a 'frown' than a 'smile', even for metal. Just ask Slayer's Kerry King: "When I used an EQ, everyone would look at it and it would be the exact opposite of what people thought it would be. If you were to look at my EQ, it would look like a frown rather than a smile. I liked the mids, because everything else I could get from my head. I used to play a show with a Marshall JCM800 and a Boss 10-band EQ, and I would have my sound. That, to everyone's surprise, including Marshall, was that frown. The EQ would start at zero and go all the way up for the mids and then back down to zero for the treble. It wasn't for leads, it was for rhythm. It made them full and chunky. If I dialled in a lead sound, I wouldn't like it for my rhythm sound. And since my rhythm is the majority of the set, that's what I base it on."

28 SPLENDID ISOLATION

Are you plagued by irritating buzzing or high-pitched whining? It might not be the sound of your bandmates complaining; it could be because your pedalboard is suffering from PSU issues. A proper, isolated power supply is a must if you are serious about maximising the sonic potential of your gear. Some units allow you to run nine-volt pedals at 18 volts – if you own a Fulltone OCD, you'll find it delivers more punch and headroom as a result. As always, consult the manual first. For small boards, the T-Rex Fuel Tank Junior (£79) comes highly recommended. Head to thegigrig.com if your requirements are more complex.

29 COMBINATION LOCKED

Prejudices about the way certain instruments sound can derive from using them in combination with amps that accentuate their less-desirable tonal characteristics, rather than complementing them. There's every chance that if your main experiences of bridge single-coils have been playing them through a blackface Fender amp, you might consider them too weedy and ice-picky. Through a fat tweed amp, vintage-style Fender bridge pickups are a different animal altogether, capable of real power and raunch. Similarly, one of our absolute favourite combinations is a mid-rich Les Paul or ES-335 through a Deluxe Reverb or AC30...

30 BONE UP

It's hard, dense, relatively durable and light and was used extensively by some of the biggest brands in the industry, so it's no wonder that many luthiers prefer natural bone for nuts and acoustic bridge saddles. Aside from benefits in sustain and tuning stability, bone is also mildly self-lubricating and porous, so it absorbs any additional lube applied and stays slippery, reducing friction. Most bone used in guitar manufacture is a by-product of animal farming – vegetarian and vegan-friendly alternatives include Micarta (a compound of phenolic resins) and Tusq (a man-made alternative to ivory).

31 ATTENUATING GAME

One of the commonest problems we've all experienced when using valve amplifiers is getting the sound and feel you like at a volume level that's deemed acceptable by bandmates/sound engineers/neighbours/the other half. Hearing damage isn't big or clever, but that doesn't change the fact that a cranked valve amplifier can be a beautiful thing to hear. At least once, all guitarists owe it to themselves to stand in front of a Marshall stack, turn the volume up to 10 and bang out a few powerchords. Back in the realms of everyday rehearsals, gigs and home noodling sessions, a good power attenuator can be the key to achieving a decent-sounding compromise and allow you to turn your amp up while turning your overall level down. While there are a range of high-quality options on the market these days, such as the Bad Cat Unleash V2 (£449) and Dr. Z Brake Lite (£199), they don't often come cheap. As usual, our resident genius Huw Price has the solution. Back in June 2016, Huw's DIY Workshop feature explained how to build your own attenuator for as little as £40 in parts. We can confirm that his Elevenator design works brilliantly and requires only a basic grasp of electronics to put together. Visit bit.ly/elevenator to see a step-by-step guide to the build.

32 GET THE CHOP

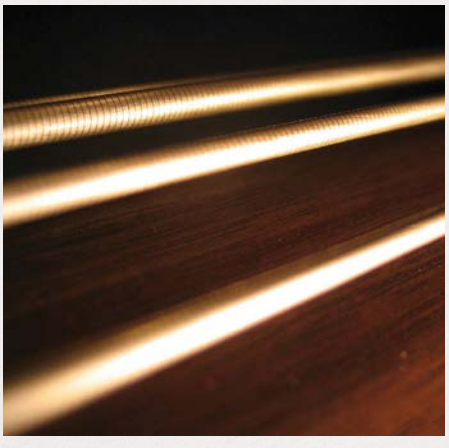
From Billy Strange's haunting guitar lines in Nancy Sinatra's *Bang Bang (My Baby Shot Me Down)* to Johnny Marr's iconic *How Soon Is Now?* and beyond, tremolo is a timeless effect that's been with us since World War II. Unlike other modulation effects such as chorus (the 1980s) or the phaser (the 70s), it's not shackled to a specific era or genre in the minds of the listener, and sounds much fresher as a result. For the ultimate tremolo experience, a blackface Fender amp is where it's at, but there are many affordable stompbox options these days, including the Mooer Trelicopter (£49) which we've even seen on pro boards.

33 RECORD EVERYTHING

These days, almost all of us have a decent-quality audio and video recorder in our pockets built into our mobile telephones. Record your practice sessions and rehearsals and review the results in the cold light of day – it can give you useful pointers about your tone and your playing, which are two sides of the same coin. Maybe that verse section needs a lighter touch? Perhaps that solo boost needs more treble to help it cut through? Even relatively unsophisticated 'room' audio can be very revealing. If you don't like what you hear, it gives you the opportunity to refine your sound before taking your rig out in public.

34 RIGHT-HAND FAN

Or indeed left-hand. Regardless of which hand you favour, out there in the real world where melody and rhythm matter more to an audience than fretboard athleticism, the most important aspect of guitar technique is picking/strumming hand attack and timing. Whether you are sweep picking or chord comping in a slow waltz, there's no point having an impeccable command of the fretboard unless you are locking in with the rhythm section and know instictively when to lay back or push against it. Do your homework: listen to Pete Townshend, Nile Rodgers and former James Brown Band member Jimmy Nolen.



35 MIC THE STRINGS?

Yes, really. In the studio, setting up a microphone to record the natural acoustic sound of the guitar strings can add percussive character when blended with the amplified sound, especially if you are aiming to capture old-school archtop tones for jazz or roots styles such as Western swing. For best results, the guitar needs to be isolated from the amp to prevent excessive bleed. This technique gives a good front-end attack to the sound and plenty of definition, which can be mixed in with the amplified sound to taste. A small condenser microphone is the best mic for the job, and it's also worth using a high-pass filter.

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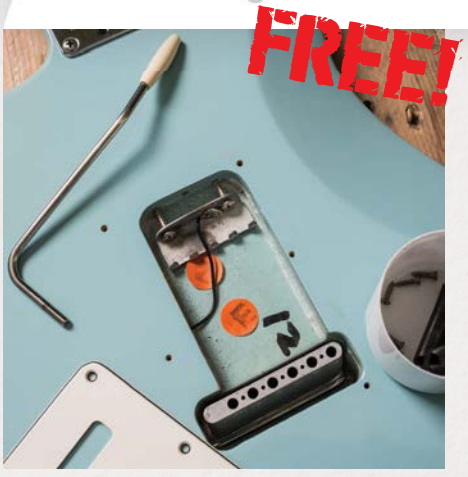

36 CLEAR YOUR PLATE

This writer remembers being told off by his mother for removing the spring cavity plate on a Squier Stratocaster during a spot of juvenile electric guitar maintenance – she was worrying unnecessarily about the risk of electrocution from the exposed ground wire. However, there is a school of thought that says removing the plate improves the acoustic and amplified voice of the instrument by negating the dampening effect of the plastic. Texan tonehound and nine-volt battery aficionado Eric Johnson agrees: "The backplates are removed from all my guitars, because I think they sound better with them off."

37 FIT A BIGSBY

Throw all of your preconceptions about Bigsby vibratos from the nearest window right now! A correctly set-up Bigsby won't just stay in tune when played in anger, it'll unlock a whole world of expression and creativity, revitalising your guitar playing and songwriting along the way. There's something about the smooth shimmer of a Bigsby that sounds and feels like no other vibrato system and every time we've fitted one to an archtop electric guitar, it's been more more stable, more in tune and more resonant as a result. Add spring reverb and the subtle throb of a vintage amp-style tremolo circuit to the mix and enjoy...

38 CABLE? TIDY

You don't have to spend a small fortune on cables to sound good, but it's no secret that a very long guitar lead with high capacitance will roll off high-end from your signal. This may be a good thing if you're using a particularly shrill guitar and those coiled cables of the late 60s and early 70s probably helped, rather than hindered, the likes of Hendrix and Brian May. We're big fans of Neutrik jacks for their chunky roadworthiness – if you'd like to tailor your cable to accentuate or attenuate your guitar's natural voice, Van Damme's Silver Series (www.van-damme.com) features low, flat and high-capacitance cable options.

39 UNDER THE COVERS

Metal pickup covers affect capacitance and can roll off high-end content from your sound. Different materials of varying thicknesses attenuate treble frequencies to a greater or lesser degree, with thin nickel silver preserving more treble content than heavy copper. Over the years, Telecaster players in particular have often struggled to dial in an amp tone that balances the bite of the bridge pickup with the warmth of the neck unit, but there are a couple of simple and free modifications that can help. If you want more clarity, you can improve matters by snipping the small wire that connects the cover to ground. The difference won't be dramatic, but you should be able to hear it. Unfortunately, you'll get a slight buzzing sound if you inadvertently touch the cover. To really open out your tone, try removing the cover completely: it can give your neck-position tone more of a Strat-like brightness and snap. Modern pickups may have tape wrapped around the coil for protection, but vintage-style pickups are likely to have exposed coils. If you do decide to go topless, as it were, it's worth enlisting the services of a pickup repairer to wrap the exposed coil, in order to prevent damage.

40 IT HAS SONGS IN IT

If you do have to shell out your hard-earned cash on a new or new-to-you guitar or bass, instead of spending hours browsing online getting hung up on the minutiae of the specifications, the year of manufacture or the country of origin, get out there into the real world and play as many guitars as you can. You might find that you are drawn to something unexpected, such as a strangely attractive vintage curio – but if you find said instrument inspiring, then it could prove to be the launchpad that allows you to embark upon a whole new era of guitar tone. The Temperance Movement guitarist Paul Sayer agrees: "If I'm shopping for a new guitar, the sign of one that I want to buy is that it makes me play something I haven't played before. In the scheme of things, what people care about are songs, not licks. If I start playing what could become the basis of a song, I think, maybe there's something in this guitar for me."

"Get out there and play as many guitars as you can"

41 INTONATION MATTERS

If you are the sole guitarist in a trio, the chances are that intonation problems don't keep you awake during the small hours. Indeed, any sleeping difficulties are much more likely to be the result of an uncomfortable passenger seat in the band van or the drummer's loud technicolour yawns making abstract paintings on the asphalt. Guitars with 'close enough for rock 'n' roll' intonation were more than sufficient to make the greatest rock music in history, but try playing that LP Junior with a wrapover bridge or three-saddle Telecaster in the context of a modern pop or R 'n' B session – you might struggle to sound perfectly in tune in the midst of auto-tuned vocals and synthesised parts. Some players compensate for imperfect intonation with subconscious, microtonal bends, but we'd still recommend giving yourself a fighting chance of getting called back for another session by taking your most in-tune instrument in the first place.

42 LOW GAIN, NO PAIN

Okay, we acknowledge that most guitarists treat their amplifier's low-gain input with the kind of disdain that a 1970s rugby player would have had for alcohol-free lager. Some of you might never have even plugged into it, writing it off immediately. As Yngwie Malmsteen once said (in a rather Nigel Tufnel-esque manner): "More is more. Less is less. The idea that less is more is illogical." But wait, what if you want to shave a few inches off that rather flabby humbucker tone? What if you want a slightly sweeter sound that's a little less strident and might even get on better with your effects pedals? Try plugging into the low-gain input and see how you get on, you might be pleasantly surprised. Just be sure to blow the cobwebs off it first...

"More is more – the idea that less is more is illogical"

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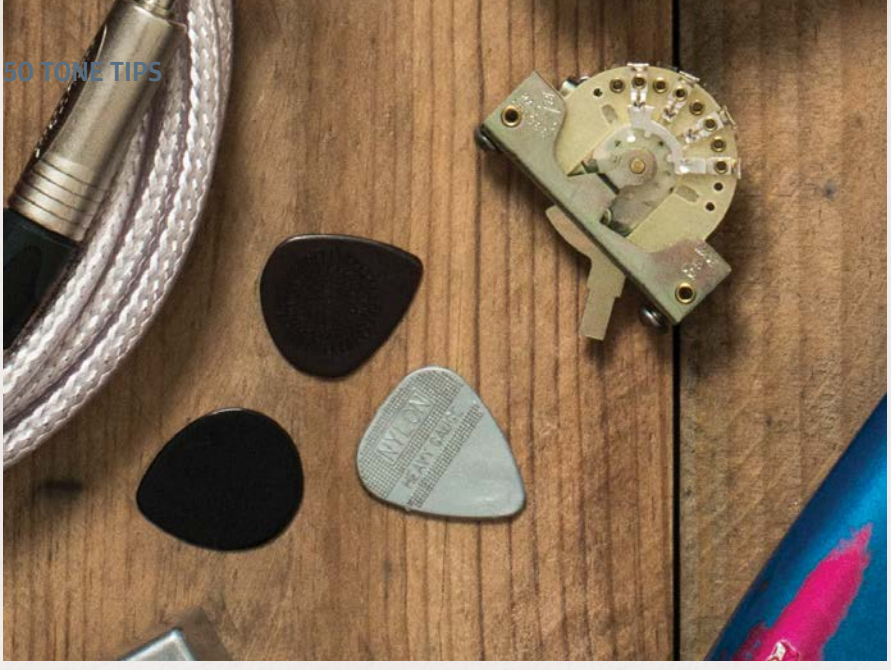

43 TAKE YOUR PICK

The tone-shaping qualities of the humble plectrum – and the way you hold it – are all-too-often overlooked. Almost every attribute of your pick has an effect on your tone, including its material, thickness, texture and shape. Unless they play entirely with fingers, most modern guitarists use a nylon or plastic pick of some description – the results of a quick office straw poll suggest that members of the *G&B* team mostly favour grey .88mm Jim Dunlop USA Nylon picks or reissue Herco Nylon plectrums, as used by Jimmy Page and David Gilmour and numerous others back in the day.

Although some purists – or should that be sadists? – swear by genuine tortoiseshell (actually made from Atlantic Hawksbill turtle shell, an animal that isn't a tortoise at all), happily, trade in the material was banned back in the early 1970s, so the 'real thing' is no longer an option. That said, we recently reviewed a couple of different types of Snark pick (www.jhs.co.uk) that mimic the feel of vintage celluloid and tortoiseshell with a high degree of success. Whatever your choice of pick – and it's a highly personal choice – try letting more of the pick stick out and use a softer stroke for a rounder tone or hold it closer to the tip for a sharper attack.

44 BLOCK PARTY

Fender originally used 10-ounce cold rolled steel vibrato blocks with shallow holes for the ball ends, and most Strat tonehounds still regard this as the best-sounding spec. To find out whether your block is steel, simply use a magnet – if the magnet falls off, it's not. The Callaham Stratocaster Tremolo Block (£63.75 via guitarexperience.co.uk) is widely regarded as the most toneful block on the, erm, block, but domestic equivalents are available from the likes of Wudtone (wudtone.com). Expect extra brightness, definition and sustain. Even if you don't plan to change your block, it's worth scraping off any paint that may be applied to the top.

45 THE POWER OF TWO

Do you crave those great dirty-clean tones that combine raunch with articulation and fatness with a crisp attack? It sounds like two amps at the same time, doesn't it? That's often because it is. However, you needn't stop there – Richard Hawley's huge-sounding live rig consists of four amps: two Fender Hot Rod Deluxes, a Fender Super-Sonic and a Blackstar Artisan 30, all running simultaneously. "It's an immense sound," he enthuses. "My old soundman hated it. He was like, 'why are you doing this? It's too complicated', moaning all the time. He got used to it very quickly once he heard it a few times..."

46 MO' MONEL, NO PROBS

What was almost certainly our biggest acoustic tone revelation of recent times came courtesy of a set of Martin Retro Monel strings. If the top-end zing of a brand new set of bronze acoustic strings sets your teeth on edge as it does ours, Martin Retros may be the answer. The nickel alloy Monel largely fell out of favour during the 1970s, as it's difficult to machine, but Martin recently brought it back and boy are we glad; Monel strings don't simply sound broken in straight out of the packaging, they unlock a rich woodiness that, particularly when used in combination with a mahogany-bodied guitar, imparts an old, rootsy flavour that's extremely addictive.

47 VOLUMISE IT

We've all done a whole set with our guitar's volume control maxed out, but there is another way! Some players like to sit with their volume on 7-8 as a 'base' rhythm tone – dialling their amp in accordingly – then when you roll it up to 10 it gives you a juicy boost for lead work and riffs. When you roll further back, if you've followed tip 19 and installed a treble bleed circuit, proceedings should clean up in a mud-free manner. Another approach you can take when using a guitar with independent volume controls for both pickups is to set one on 10 for your full-bore rock sound and roll the other back to switch to a preset rhythm level.

48 FLATTEN THAT STRAT

Strats sound thin and weedy, right? There are numerous examples in rock and blues history that prove that preconception wrong, and one of the most powerful Stratocaster 'thickening' mods of all is free of charge. Tuning every string down a semitone and playing in E♭ has a remarkable effect on Strat tone – it's no wonder that the likes of Jimi Hendrix and Stevie Ray Vaughan were fans and modern Strat slingers such as Philip Sayce follow suit. You may need to tweak your set-up and even go up a string gauge, too, but it's amazing how much extra depth it imparts.

49 CAPO FANTASTIC

Sometimes you can get bored of the familiar sound of your favourite guitar. Experimenting with altered tunings is one way to spice up the marriage, and another is to employ a capo. Don't just think of the capo as a way to play familiar songs the same way in a different key – using a capo on the second or fourth fret really seems to suit certain guitars and have a 'tightening' effect on their overall tonality that makes open chords and arpeggios really sing. Johnny Marr and Keith Richards are just two players who have utilised the power of the capo to hitmaking effect over the years.

50 PLAY MORE GUITAR!

We've left this tip until last because it's comfortably the most important piece of advice we can give you when it comes to guitar tone. As one member of the team said in an office discussion recently, "It's amazing how much my tone improves when I play more guitar." That's no joke, either. The fastest way to sound better is to play better, and the way to play better is to practise as much as possible. You don't have to have a strict daily regime, build up speed with a metronome or immerse yourself in theory – simply having an exploratory noodle or strum every day will help you stay match fit.

Keep a guitar in the living room so that you have no excuse or, better still, arrange a regular jam night with friends. In this increasingly digital world there's still no substitute for the excitement that human chemistry can bring to making music. The more you play at band volumes with other musicians, the better you'll understand your gear, the better your timing and feel will get and the better you'll sound as a result. Take a holistic approach and think of great guitar tone as a result of the whole experience of making music rather than an end in itself and you won't go far wrong. Now put this magazine down, pick up your guitar and play!

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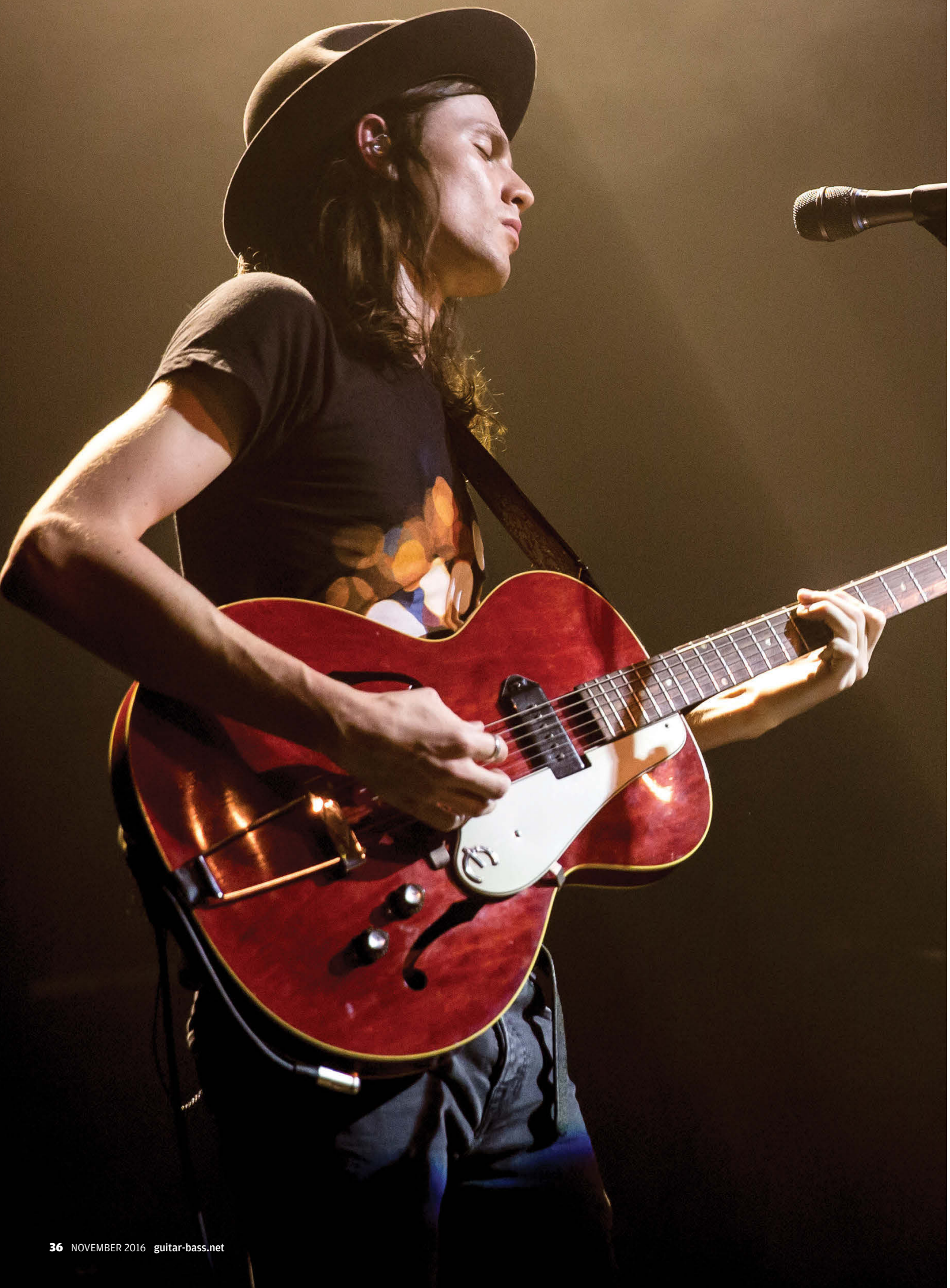


THE *Guitar & Bass* INTERVIEW

"The last bar I was working in, I told the manager, 'I quit. I've got to go to New York to sign a record deal'"

British singer-songwriter James Bay has enjoyed a meteoric rise to fame, with his debut album entering the UK charts at Number One and going double platinum. He tells *G&B* how he did it, where he's going next, and how his 1966 Epiphone Century was nearly the one that got away...

Story **Michael Stephens** Photography **Paul Alexander Knox**

Paul McCartney and his Höfner Violin bass. Eddie Van Halen and his masking-taped 'Frankenstrat'. Jack White and his Montgomery Ward Airline. Neil Young and his 'Old Black' Les Paul... James Bay and his red Epiphone Century?

Every era has its own inseparable duo of star and guitar, and while 25-year-old Bay is some way yet from the stellar company listed above, he's undoubtedly looking up. Three years ago, few people knew who James Bay was. Quite a few guitar players had never even heard of an Epiphone Century. It's now a very different story.

Bay's talent is the key to such matters, of course. His debut album, *Chaos And The Calm*, is now so ubiquitous you'd be forgiven for thinking every track has been a single; in fact, it's 'only' six out of 12. Sales and praise have become constant companions: three Grammy nominations, Brit Awards, an Ivor Novello, mentoring from The Rolling Stones, the on-message charity single (*Running*)... and so it continues. Today, Bay is playing Portugal's Festival Marés Vivas, in the same late-night slot played the day before by Elton John. It's a "fly-in" show, explains Bay, meaning he and his band don't have their own backline. Instead of his favourite Hamstead head and cab, he must 'settle' for Fenders ("That's fine!" he chirps. "It'll be a good challenge"). But you can be sure Bay disembarked the plane with his must-have companion: his red 1966 Epiphone Century hollowbody electric. Bay understands these things are important.

"I really believe in aesthetics, imagery, iconography, branding if you want to call it that," he explains. "From the Stones' lips logo, to Michael Jackson's sparkly glove, to Bruce Springsteen's *Born In The USA* cover... so once I had the physical connection with my instrument, in playing and sound terms, I was always going to make it the forefront of what you see onstage."

"Between that and the hat," he smiles, "it's worked out. I can't lie – in the back of my mind, I thought these things might help me achieve what I want to achieve. It'd be naïve to say, 'Ohh, it all just happened'. I knew I was going to have to do a shit-load of work to even get a bit to happen for me, and I have... but it seems to be working."

James Bay's school of rock

Bay is clearly adept at learning the art of a career in music, yet it's equally obvious he's no cynic. He simply loves music. Born in the small market town of Hitchin – population 33,000, "famous" for pioneering the use of black bin bags – he started playing guitar, aged 11, on an old nylon-string classical of his father's. "He couldn't play it, though. He'd got it off my uncle... he didn't play either." Inspired by hearing his dad's Derek And The Dominos *Layla* album – not exactly the zenith of cool at the turn of the century – young James discovered he had some talent. >

"I still think a lot of even really experienced guitar players appreciate that an acoustic is a good thing to learn on. It was unwieldy, not easy to play... it sets you in good stead for whatever comes after that."

What came next was a Yamaha Pacifica electric – but "I wasn't feeling anything remotely 'Strat' in me, so I sold it" – and then an Epiphone Les Paul Special II: "from the money for the Pacifica and pennies I'd saved from working down the market. I suddenly felt a little more like Slash or Aerosmith! Aged 14, that's what floated my boat.

"But I painted it. Dunno why! It wasn't very good..." his voice tails off, diplomatically. "Later, I had an Epiphone EJ-200..."

By his late teens, Bay was playing live and was a student at the Brighton Institute Of Modern Music (see also, Tom Odell, George Ezra, The Kooks). BIMM is justifiably proud of its student, but Bay is at pains to point out he's no production-line popstar: "I left early. I only did two years.

"I do appreciate the time I spent there and all the people who helped me, but... rules, lessons, I just don't think they should really exist when it comes to music, y'know? It depends what you want out of playing, what you want from the outset, I know that. But I feel that when I'm learning music 'by the book', as it were, I start to get worried. It stifles my creativity.

"My basic point is, when you don't know what you're doing, that's when people can come up with truly brilliant things. Sorry, tangent there! I just wanted to say it."

Gigging in and around London followed, supported by money from bar work: "Hated it. Mainly because I was working in the hours when I should be doing a gig. So, I finished music college when I was 20, turned 21, and I was looking at my life clock. I thought, 'Hang on, I'm not some 19-year-old who's signed a huge record deal like I dreamed about. I'm 21!' It sounds harsh, because I know you can get into music at any point in life, but I became very aware that I was doing not much more than working in a bar."

> "Rules, lessons, I don't think they should really exist when it comes to music. It stifles my creativity"

First we take Manhattan

Fortune would have it that a friend had posted a video of one of Bay's pub performances on YouTube, and unlikely interest was piqued from New York label Republic Records. They asked to meet Bay.

"The last bar I was working in, I told the manager, 'I quit. I'm sorry this is last-minute, but I've got to go to New York and sign a record deal'," Bay remembers, laughing. "Well, that's what I hoped. It sounded so cheesy, but that's honestly what I said to them. Ridiculous, right? The guy who ran the bar was my parents' neighbour, and he was like, 'Come on mate, are you joking?'"

Turns out he wasn't. Bay flew out to the States with his manager – yep, he'd learned he'd better have one – though he insists it was "really just to chat, play them some songs and hang, really. They wanted a better sense of me as a potential artist, I think, and as a person." There was downtime, and what does any aspiring musical artist do in Manhattan on a day off? Forget Central Park, the Empire State Building, the Statue Of Liberty et al...

"We went down to Bleecker Street!" laughs Bay. "I'd only been to New York once, with my parents. This was more on my own terms. I was sort of obsessed with Greenwich Village, this notion of the beautiful, idyllic, creative place, right? It was potent. We went down to Matt Umanov Guitars there, it's been there since 1965. And Matt's still running that place, I think. Anyway, they had a load of Strats, Gretsches and so on... and behind the counter all these old Martins, Gibsons. But they also had this beautiful red Epiphone. An Epiphone Century..." Bingo.

Plugged into "one of those little cigarette box amplifier things", Bay played the Century and was instantly smitten. "What is it about guitarists and red guitars?" he questions himself. "Just so attractive. But this was particularly special beyond the colour. For a start, you could really see the grain of the wood. It wasn't just flat red. And it was hollow-bodied, which was great, as I was just one man and an acoustic guitar at the time. I was coming round to electric guitar again, but I wanted to do shows on my own, still. Well, I had no band. So, I was kinda thinking of hollowbody electrics, plus I like P-90s... and here was this Epiphone Century."

Regrettably, Bay couldn't afford it anyway. After a thanks-for-coming dinner with the people of Republic, Bay flew home. No deal, no new/old guitar. "I went back on the Matt Umanov website when I got back home, as I'd promised myself I would buy the Century when, or if, I was next in New York. And there it was: but with a 'Sold' notice on it."

But, hey, you already know this tale has a happy ending, don't you? It was a few days later when Bay got a call saying a package had arrived at his manager's office. He immediately went there: "I had the time. I had a lot of time back then."

The package was "a big box. Familiar shape, familiar dimensions, opened it up, and there was the guitar, sent by Republic." James Bay had got his record deal. And he'd got his Century. "My life was maaaade [laughs]. And the rest, as they say, is the rest..."

21st Century boy

Bay insists the Century's visual allure was only part of the package. "I was – and still am – into that whole Jack White and Dan Auerbach [Black Keys] thing," he says. "Scuzzy/fuzzy guitar tones, going back to T.Rex and Bowie as well. It was funny when I first picked it up, though: I was simultaneously broken-hearted and elated. I'd just picked up this gorgeous guitar with a wound G string when I thought I was going to be buying this cool soloing guitar, and it wasn't that at all, really... But I also thought, this could be what I need for my playing, this could give me that more 'fighting' approach.

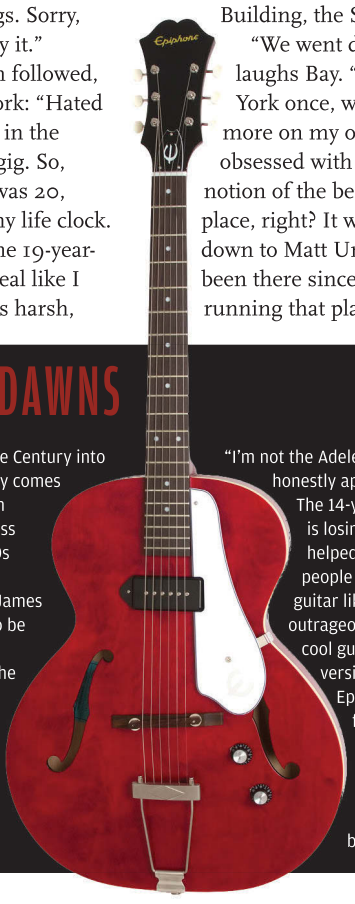
"I think that's what I'd always loved about Jack White's playing, y'know? He seems to be fighting with his instrument. Dan Auerbach has the same thing, playing those old Guilds and Harmony Rockets or whatever... I really like that idea."

Bay's red (or, officially, Royal Burgundy) Epiphone Century is from 1966. P-90 >

A NEW CENTURY DAWNS

Summer 2016 saw Epiphone reinstate the Century into its line-up. The Inspired By '1966' Century comes in Cherry and Vintage Sunburst. It has an Epiphone P-90 PRO with a tin-plated brass baseplate, like those used on 50s and 60s Gibson P-90s, plus Wilkinson Vintage three-in-a-row machineheads. It's not a James Bay signature, but it would be unlikely to be back on the shelves without his impact.

"I think the whole thing is fantastic," he says. "I met the guys at Epiphone and, as much as they said thanks for playing that particular guitar, it's certainly not about me," he insists. "They did say that there wasn't a demand for this guitar until I started playing one, but the effect hasn't exactly been seismic.



"I'm not the Adele of guitar players! I just honestly appreciate it's happened at all. The 14-year-old me, even the me now, is losing his mind that maybe I helped bring this to light. And any people who previously wanted a guitar like this can now get one. That's outrageously cool to me. And it is a cool guitar. Y'know, it's not another version of a Casino, 'cause Epiphone have done Casinos forever, from Beatles era to Paul Weller to Noel Gallagher, whatever, and that's great. But the Epiphone Century is maybe just something a bit different."

Bay in live action with his beloved Epiphone Century, the guitar that shaped his debut album

pickups replaced the New York model pickups in 1960, before the guitar was discontinued in the USA in 1969/70. But its era means his Century is a 'Kalamazoo' Epiphone, that is to say, one made in the main Gibson factory of the time. Bay is nerdily proud to stand out from the crowd.

"The guy at Matt Umanov said the red was quite rare," says Bay. "Epiphone didn't make many, and he said the single P-90 model was quite rare too. I have been to see Epiphone since, up at the company [now in Nashville], and they had all these amazing old booklets and lists of stuff. I've since found out there were 366, I think, made in '66. 1969 was the last year that Gibson made Centurys... there were 11! So, if anyone's got one of those, they're very rare."

Bay's since bought another, his brown '65 Century with dual P-90s and what he believes to be a factory-fitted Bigsby. "The walnut one is a bit of a backup for the red '66, really. It's different. I took the Bigsby off recently just to have a closer look, and it's a heavier body, definitely. It can't just be the second pickup, an extra P-90's not that heavy. So it could be the actual wood that's different. I don't know.

"And even though the brown one is older, there's something about the red '66 that is lacking in lacquer that makes it breathe so nicely. There's literally something a lot more 'coated' sound-wise about the brown one. I obviously don't play it as much, and the red is so resonant. They look like ramshackle, thrown-together instruments in a way, but they're really not.

"The brown one was 900 quid in a sale, in England. I thought 'what's wrong with this? Why are these guitars not more?' I mean, there's no reason to make them more expensive, even as 'vintage' instruments, but they are fascinating to me. The brown one responds better to a plain G string than the red one.

"They both originally had a wooden bridge, but I've put a metal bridge with individual saddles on the brown one just to mess with it a bit – sort of make it more of an electric guitar.

"But I certainly don't have any problems with them. I've always adopted the Keith Richards approach. As soon as the men in white coats come in – I know that doesn't exist anymore – and any dial goes into the red, they'd turn it down. And Keith would say: 'turn it up! Crackly, fuzzy, buzzy... give me that'. I have had to change the pickup on my (red) Century, though: it gave up the ghost last year. But I kept the original and had one modelled exactly on it by a guy in New York. I did go noiseless, though, because I want to play that guitar on TV. And TV studios suck for P-90s. It still sounds like a P-90. No-one's complained. It's just a bit better."

> "We went to Matt Umanov Guitars and they had this beautiful Epiphone Century..."

An Epiphone Century, like any guitar, isn't going to suit every situation. Bay himself admits he is very choosy about guitars because, in his head, he thinks "every guitar should be perfect. And that's just silly, really." But it is noticeable that, for a player who namechecks Eric Clapton, Stevie Ray Vaughan and Derek Trucks as inspiration, he steers clear of solos. Indeed, it was one "rule" Bay did adopt for *Chaos And The Calm*. "True. Though in my live shows, there's two or three songs now where there are solos. But that's enough in a set where it's not really in the blues 'genre'. But there will be more overt guitar work on my records in the future, if I can help it. But, for now, I've made the concerted effort not to be a 'noodler'. It's a balance. It's a debut album. I wanted to get my songwriting chops across.

"Even the solos I do play in the set at the moment are somewhat written, they're not out-and-out improvisation. As someone who's focusing on songs and melody, I can't get away with that. Yeah, I'd love to be wailing away, improvising over a 12-bar for three hours – that's how I spent my teenage life in my bedroom! But I can't.

"It sounds a bit knobby, but I think the crowd deserve better than that. They've come for a chorus, a lyric, a melody, a feel... and a fancy bit of guitar if they can take it. I appreciate they're not coming for guitar solos. Who knows, though, where I'll be in 10 years? I just hope I'm still here, playing."

Despite his growing knowledge of production runs and Epiphone Century history, Bay remains intrigued by his '66's uniqueness. "One thing I love, that is so hard to find out about, is that my red one seems to have a particularly narrow headstock. Different to any other Epiphones, LG shape or dreadnought shape that I've had. And the base of the headstock on other Centurys I have seen is wider. Like a Gretsch-style – big, wide and square headstock. I really don't like that look, so I just love mine. That guitar, and me, basically wrote the whole album. The ballad-y songs and the rockier ones like *Hold Back The River*... all written on that guitar."

Not a bad return for one man and his guitar. Suffice to say, if he finds another Royal Burgundy '66 Epiphone Century, James Bay will now be able to afford it.

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BUFFALO

See the light

Things are on the up for Jake Smith, aka The White Buffalo. As the singer-songwriter tells *G&B*, he is embracing the lighter side of life while retaining brutal honesty in his compositions

Story **Mark Alexander**

Jake Smith has a compelling voice, rich with weathered textures and heartfelt regret. He sounds brave and vulnerable at the same time, which makes for a compelling and absorbing listen. Above all, his voice has an innate authenticity and his lyrics are delivered with unquestionable conviction and force amid the turmoil of the tales he tells.

Smith, who is the frontman of – and is also known as – The White Buffalo, is very much a singer-songwriter of his time, fashioning evocative compositions from a cross-pollination of Americana, country and rock. Impassioned and intense, his songs have been used as the gritty sonic backdrop for TV shows such as the motorcycle gang drama *Sons Of Anarchy* and computer >

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Smith is a thoughtful songwriter who, in *Love And The Death Of Damnation*, has released his most positive album to date

games including *Halo Wars 2*, illuminating the darkness with his delectable melodies.

"I grew up on country music and then went into the punk thing, and then got super into songwriters," he says quietly. "It has always been, and what I still listen to now is, organic and visceral. The marriage of lyric and melody is very important. I feel that you should be moved."

Listening to his latest offering, *Love And The Death Of Damnation*, you can't help but be affected by a beautifully crafted album, with the UK version containing three more tunes than the US release. Evocative songs such as *Last Call To Heaven* and *Darkside Of Town* deal with murky issues with an eerie, underlying tension in which you find yourself immersed. With laments about drug deals and tales of rebellion, you would be forgiven for thinking Smith is on something of a downer; quite the opposite, in fact. "Musically, and even thematically, I wanted to try something different. This album is the most positive album I have made," he says. "There were specks and glimpses of that in past albums, but I always tended to go to a darker place. In some of these tracks, I wanted to keep it lighter in a sense that life is full of the good, the bad, the love and the hate. It doesn't always have to go to the darker, super-deep place to reach that emotion. The emotion of love and feeling that everything is going to be great is part of life as well."

> "I wanted to try something different. This album is the most positive I've made"

A review in the *LA Times* described Smith's voice as echoing with "villains and misfits, drunks and philistines", and while this interpretation captures perfectly the rasping torment imbedded in his style, it perhaps misses the optimism booming out of tracks such as *Home Is In Your Arms* and *Dark Days*.

To find his optimistic streak, however, Smith had to consciously stop himself following the familiar darker path. "The way I write, there are so many different options and versions and places where I could take a song," he says. "I remember at one point when I was writing the song called *Go The Distance*, which is a love song, I started to go into an argument, but I made a conscious effort not to go there," he explains. "With the help of the producers, we also tried new things, like a gospel song at the end of the album, which is something I had been banging around for a while but they definitely helped me get it done."

Smith continues: "As a guitar player and a songwriter, you get into funks where what comes out just comes out, and to force yourself out of that and to force your right hand to do something that it has never done before can be difficult. But when you do it, you create a whole new palette to explore."

Despite being nominated for an Emmy Award for his track *Come Join The Murder*, which featured on the soundtrack of the season seven finalé of *Sons Of Anarchy*, Smith came to the guitar relatively late at the age of 19. "We would go over to my friend's house and his dad would play Dylan and old folky songs. At the time, I was aspiring to be a baseball player," he remembers. >

"So I just went out and got a guitar for fun, and instead of learning other people's songs, I started writing my own.

"I had this stuff in me that I didn't know existed. It was weird that these songs came out even though I had only learned two chords. As primitive as it was, there was still no agenda about becoming a songwriter. It was just what came out."

Smith's first acoustic was a Fender bought from a pawn shop, although it didn't stay for long in his collection. His Taylor guitars, however, have. The first is his 710e dreadnought, which features a shorter 24 7/8-inch scale length and lutz spruce top that helps raise the guitar's volume. The second is his 810e rosewood and spruce dreadnought, which is noted for its strong, crisp top-end punch.

"I wasn't super-informed about Taylor guitars before I had them," he explains. "I'd had a Taylor in the past, but it was totally the wrong guitar for me. It was a cutaway for fingerstyle picking, which wasn't the right guitar. I now have two dreadnoughts, but even before I was endorsed by Taylor, I played Taylors. They are great recording guitars. 95 per cent of all my albums have been recorded on Taylors."

On stage, Smith delivers his songs with intensity and fire. The show is part singalong, part confession, and it brims with infectious energy. "With the adrenaline and excitement, things often get a lot faster and heavier and more aggressive," he says, describing his live performances. "It's fine; it's part of the experience. It's a little more reserved in the studio, but you still want that passion and excitement to come through. There is definitely a balance. One thing about the Taylors is they are very well balanced guitars."

He continues: "I am so abusive to my guitars – the guitar I play live, I have had it for maybe a year and I've played 50 shows with it, but it looks 10 years old, there is almost a hole in it. I've had to get it refretted for a second time. I must have big hands or something. I just squeeze it pretty hard and sweat a lot."

Smith's onstage delivery is compelling. Like all great story tellers, he is as fascinating to watch as he is absorbing to listen to. Playing in a three-piece band, he is the vehicle through which the stories are channeled, with force and feeling. It's a responsibility he handles well, although you get the impression he can be hard on himself.

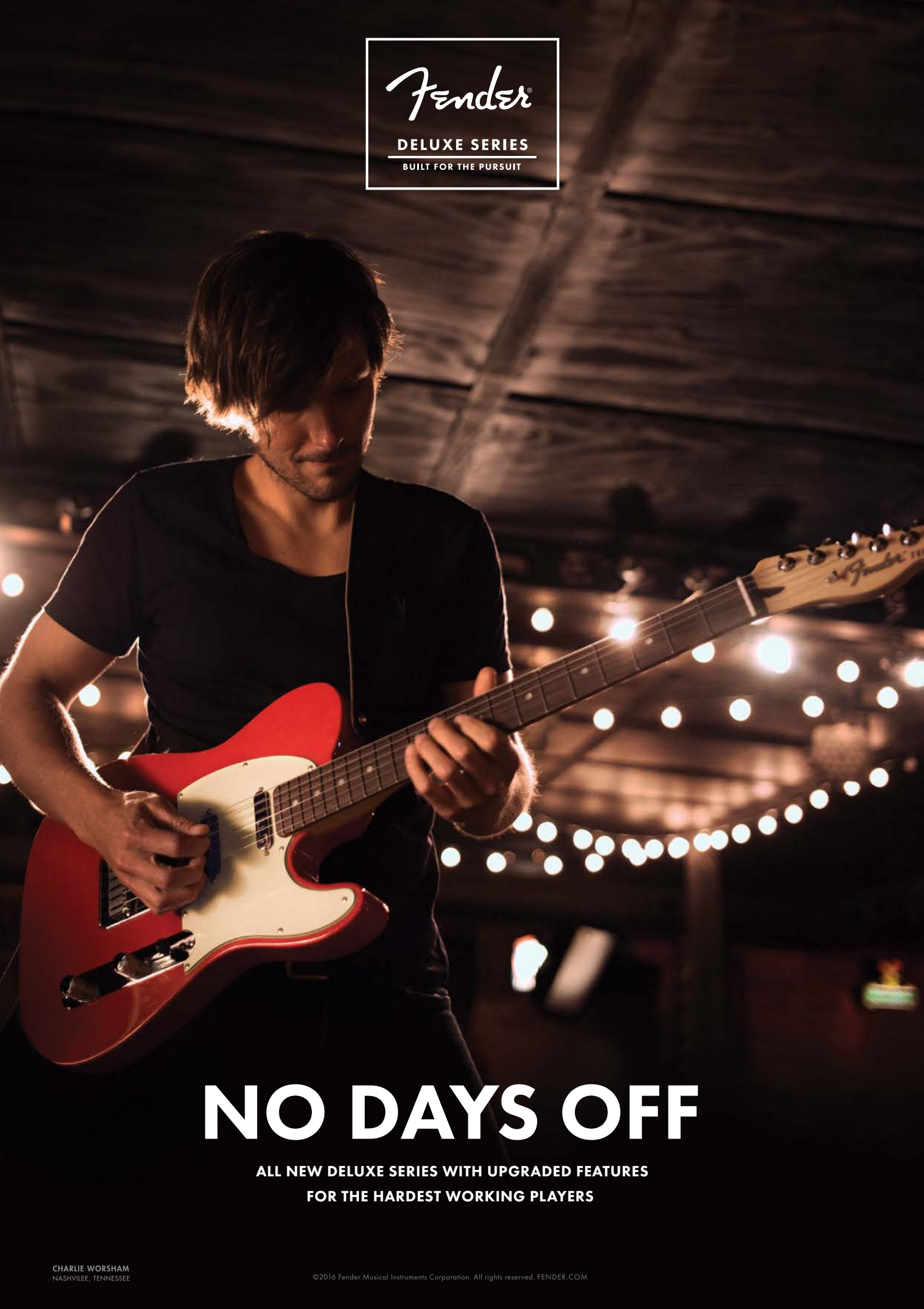
"I try and feel it every night and get into the songs and the crowd. I don't ever want to just stand up there," he says. "When all the tools are working, it's fine. There are times when my voice isn't on point – a little out, which is a huge part of what we do, especially when there are only three guys up there, with no effects or anything. When that goes, I feel it and it's not the greatest feeling."

Like many successful artists, then, Smith is his own toughest critic. It's a self-preservation strategy that helps to keep the cycle of development and inspiration turning. And who would argue with that? With a killer new album and growing fanbase devoted to his gripping live performances, there is a lot to admire.

Indeed, for those wishing to emulate his winning singer-song-writer formula, The White Buffalo has a few choice words of advice. "It's about being honest, or at least coming across honestly," he says. "If I am writing a song about murder, which I know nothing about, it has to be honest and the story has to move you so that every word counts. I also try to stay away from clichés. Half the time, you listen to songs and you know what's going to be said after you've heard the first rhyme. You've got to try to surprise people and be honest with some kind of emotion."

He concludes: "Normally when I am writing a song and I feel something, then I imagine it will have some impact on the listener as well. There is a definite craft with songwriting."

> "I am so abusive to my guitars. The guitar I play live, I've had for maybe a year, but it looks 10 years old"



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DIY WORKSHOP

WATKINS WESTMINSTER MKII REFURB

Pete Mortimer's dad gave him this WEM MkII back in 1969, but it suffered numerous modifications and was eventually sold on. He bought it back recently and resolved to restore it to its former glory... **HUW PRICE** answers the call

1 The only external feature that had survived was the tolex and, no, this isn't a Danelectro amp

2 The amp looked in better shape from the back than the front, but those corner protectors would have to go

The first time Pete Mortimer caught sight of this amp, his father was carrying it up the driveway to his house. It was December 1969 and it looked as if he would be getting the guitar amp he had been dreaming about for Christmas after all. Well, not quite... rather than the 18-watt Marshall he really wanted, his dad had bought Pete a WEM.

This model is a very rare Westminster MkII that originally had a metal front plate and a punched metal speaker grille that Pete describes as "looking like an electric heater". Many original features fell by the wayside over the years, and eventually Pete sold the amp to a mate. The little Westminster suffered further indignities as the original ELAC alnico 10-inch speaker was replaced with a 1980s Celestion G10S-50 and a Danelectro sticker was affixed to the space vacated by the front panel **1** & **2**.

Then, earlier this year, Pete received a call asking if he'd like to have his amp back. Having long ago recovered from his childhood disappointment, Pete seized the opportunity and brought it over to me. The amp was still working – albeit with a prodigious amount of humming – so we decided it would be fun to restore it to something approaching its former glory.

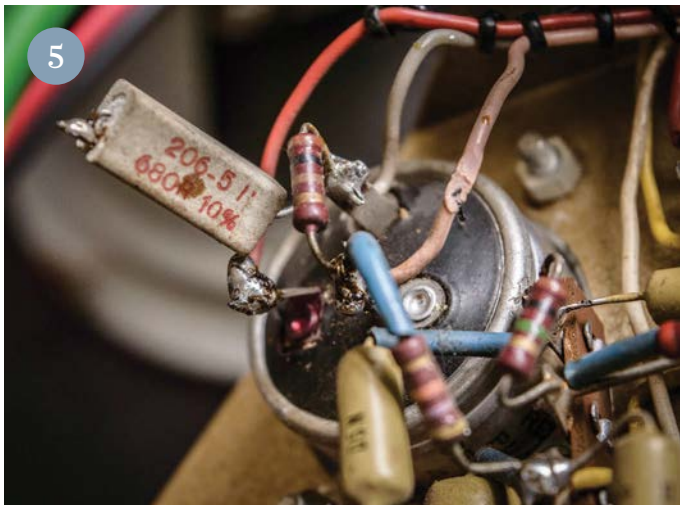
The electrics

This is a true point-to-point wired amp. These days, you'll have to pay a premium for this style of build, but back in the 60s it was often the budget amps that were constructed this way. The build quality here is pretty meticulous, with insulation over all the component wires and joints that were made mechanically tight before soldering.

Upon stripping the amp down, the probable cause of the hum was apparent immediately. Nothing much had ever been done to the circuit, and the electrolytic capacitors were decades past their 'use by' date. The main filter capacitor was a canister type containing three 16uF capacitors. The end of the cap had swollen to a spherical shape and had actually begun to split **3**, and the bias and the cathode bypass resistors were in a similarly poor condition **4**.

The two dropping resistors appeared to have been changed, because the soldering looked relatively sloppy **5**. Since these resistors endure a hard life, it was decided to replace them along with the cathode bias resistor **6**. All the electrolytic capacitors would have to be replaced, but I decided to leave the signal capacitors because they are all mustard types, which are renowned for near-indestructibility as much as tone.

The circuit diagrams I found online specified three 20uF capacitors in the canister, but the one in this amp contained three



16uF capacitors. It also had date stamps to provide some clues about the WEM's vintage. The cap was manufactured in December '63 and 're-aged' in May '65.

Capacitors of this sort are no longer easy to find, but JJ manufactures a 40/20/20/20 canister cap, and I ordered one from Tube Town in Germany – along with a 40mm clamp to mount the JJ onto the chassis. The JJ's diameter was somewhat wider than the original's, but the clamp's mounting holes lined up with those of the original clamp, and the JJ's base could sit on the chassis with the connection tags protruding through the cut-out.

The various capacitors have letter codes and, since the 40uF wasn't needed, I folded over its connection tag so I wouldn't use it by mistake. The three wires were pushed through the tags and, after I'd mounted the new five-watt metal oxide dropping resistors, everything was soldered up 7.

The smaller capacitors were harder to replace because all the components were so tightly packed it was hard to get at the joints with the soldering iron's tip without burning things. The component legs were also wrapped so tightly around the connection points I gave up trying to de-solder them and resorted to snipping them out.

I fired the Westminster back up with the amplifier section removed from the cabinet. If you ever try working on one of these – or merely own one – there are certain dangers you should be aware of. It seems 'health and safety' was not an overriding concern at WEM, and the mains fuse is mounted on the outside of the chassis 8.

It isn't even enclosed in a fuse holder, so if you ever suspect that one of your valves has come loose and you reach inside to find out, there's a strong possibility you'll get a nasty electric shock. Even the connection terminals on the mains transformer are exposed, so be very careful with these amps and, at the very least, disconnect them from the mains and remove the back panel so you can see what you're doing before attempting any maintenance work.

Fortunately, the capacitor changes fixed the hum issues and the internal voltages were all within the ballpark of those suggested on the WEM schematic. With the electronic restoration complete, I turned my attention towards the cabinet 9.

On a plate

I'll confess now that I had never seen a WEM Westminster MkII before this one came along, so in order to perform any sort of cosmetic restoration I had to work from photos. Sometimes, eBay comes up with the best images, and an Italian auction for a Westminster MkII yielded some high-resolution images of an original in very fine condition. This amp would have left the factory with an aluminium >

3 If you see a filter cap that has a swollen and cracked base like this one, it's time to get a replacement

4 This cathode bias capacitor is in poor shape, and you don't need a capacitor tester to tell it's shot

5 The 680R and 10K resistors were mounted on the power supply with some dodgy-looking solder joints. Replacing these is a wise precaution

6 Although it measured close to the specified 390R, this cathode bias resistor looked as if it had seen better days, and didn't inspire confidence

7 The new 20/20/20uF JJ filter capacitor has been installed, along with two new five-watt resistors

8 Fortunately, the new capacitor clip lined up nicely with the original screw holes. Beware of the exposed fuse holder and mains transformer connections because they're live and the five-amp fuse should actually be a one-amp

faceplate bearing a silk-screened graphic. The design incorporated multiple black stripes arranged in four blocks and separated by three red stripes. Along the bottom edge was the model name and the legend 'Controlled Power Amplifier'.

At the cabinet base, there would have been an aluminium strip with the words 'Watkins Electronic Music London' and a treble clef motif. Since you can't buy vintage, or even reproduction WEM amp parts off the shelf, the challenge was to make up some new aluminium parts that would capture the vibe of the original.

On a recommendation, I called up Metal Goods in Bridgend (www.metalgoods.co.uk), explained what I needed, and they told me to come straight over. Having taken careful measurements and examined the auction photographs in detail, I was able to provide diagrams of the two parts I needed, along with all the dimensions. With their industrial machinery, the metal was cut and folded within a few minutes for a cost of only £5. So if you're doing something like this, phone around because you may be surprised by what you can find locally.

Getting graphic

The original would have been screen printed, but getting that done for a one-off project such as this would have been prohibitively expensive. Instead, I decided to draw up the design in a graphics program and print water slide decals. First, though, I needed to figure out the dimensions.

It was easier than anticipated because the online pictures were so clear and there was a fantastic front-on shot. I printed that off, measured the image and compared that to the full-sized dimensions. I came up with a ratio of 1.55:1, so multiplying each and every measurement taken from the print-out by 1.55 I was able to draw up a full-scale design.

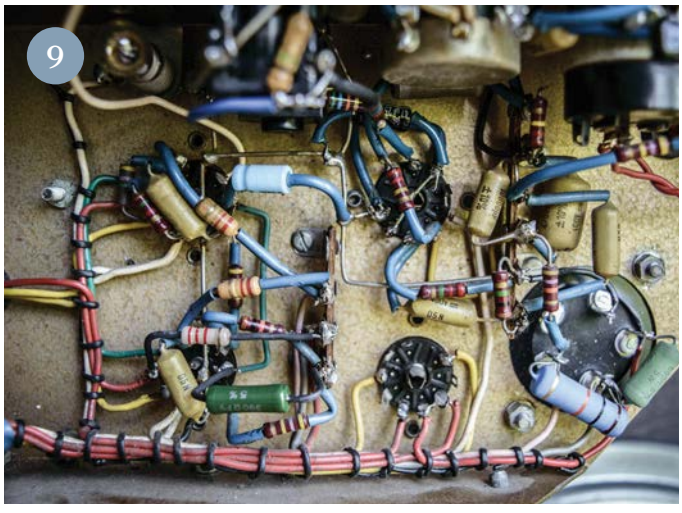
Once I had established the basic box sizes on the computer, I filled in the rest of the details. Unfortunately, I wasn't able to match the lettering fonts exactly, but unless Pete's amp ends up side by side with an original Westminster MkII, I figured it was close enough.

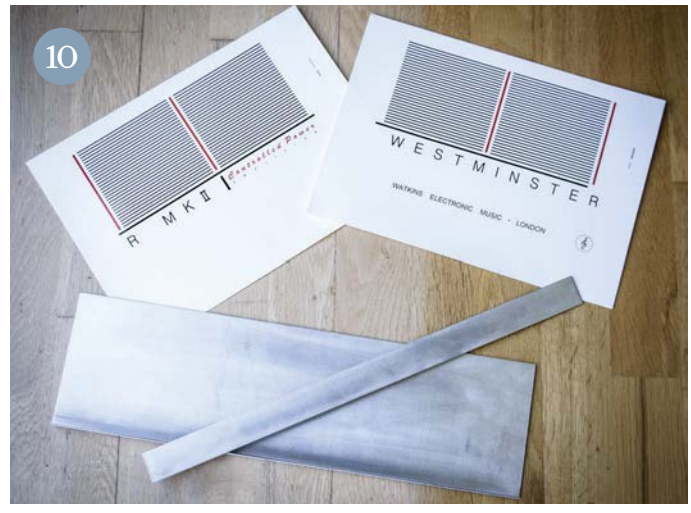
The plate width was 420mm, so the graphic had to be printed onto two A4 sheets of water slide decal paper. I used an inkjet printer, so the print had to be sprayed with an acrylic sealer before it could be used. Without the sealer, the ink dissolves in the water **10**.

Lately, I have been mixing a little PVA glue into the water I use for water slide decals because I find the decals adhere far better to the surface. Once the decal had dried fully, more acrylic coats were sprayed over the decal to seal and protect it.

Prepping the cabinet

At this point, the amp was arguably





looking worse than when I started and it was time to give the whole cabinet a good clean. Baby wipes are effective and you can get stubborn dirt off hard-to-reach areas with an old toothbrush and washing up liquid. The original tolex had survived – just about – and it scrubbed up pretty well. I took the opportunity to remove the metal corner protectors and, once the screw holes had been packed with black Milliput epoxy resin, they almost vanished.

Having corresponded with WEM expert John Beer of Amp Fix, I realised finding a punched metal speaker cover that looked authentic wasn't a possibility. Pete didn't care particularly for that look anyway, so he requested Marshall-style 'salt and pepper' speaker cloth instead. I also ordered this from Tube Town and, since I needed only a small quantity, I was able to get by with an offcut.

A wood frame with cloth stretched over the top had been used to replace the original speaker cover – which made the front of the amp flat. To recreate the original look, the speaker cover needed to be recessed behind the faceplate, so the plan was to glue the new speaker cloth directly onto the baffle.

Unfortunately, the baffle was covered with old glue residue and the faceplate had been treated to a few coats of matt black that had been applied straight over glue. I scraped the gunk from these areas with a Stanley knife blade to ensure a clean surface for good adhesion 11.

Barring accidents

The original metal cover had also provided protection for the speaker, and replacing it with a relatively thin layer of cloth would leave the speaker vulnerable. So I decided to fix two metal bars across the front of the opening in the speaker baffle.

The plan was to glue the speaker cloth straight onto the baffle, so the metal bars had to be set in. Once they were cut to length, I placed the bars across the cut-out and marked their outer edges. Using a Dremel on a router base, I cut out four recesses so the bars would be flush with the baffle surface 12.

Rather than use soft and bendy aluminium, I chose steel bars, which you can find in B&Q. The steel is very rigid, it's not that easy to cut and it's even harder to drill and countersink, so I glued the bars in position using Araldite 13.

Finishing touches

In order to recapture some elements of the original look, I decided to glue the speaker cloth straight onto the baffle. I cut it carefully to the exact size, making sure that about 5mm would tuck under the top vent. After a trial fitting, I applied a fairly generous quantity of Copydex glue to the baffle and the front of the bars then laid the cloth in place, making sure first that it was completely flat. >

9 This is what true point-to-point amp building really looks like. The electrical restoration is complete with 68k grid resistors, the inputs reconfigured for hi/lo and a new cathode bias resistor

10 The graphics have been printed on two sheets of A4 water slide decal paper and they're ready to go onto the faceplates. The upper plate has a 10mm fold-over along its bottom edge

11 The original speaker grille and faceplate were glued to the cabinet and the old glue residue had to be scraped off before fresh glue could be applied

12 The steel speaker protector bars are test fitted after the recesses have been routed

13 Having been glued in with Araldite, the bars are flush with the front of the speaker baffle, and they should be invisible once the grille cloth has been applied

14 Copydex glue was used for the grille cloth, but don't apply too much to the baffle because you don't want it oozing through the weave. Evo-Stik has been applied to the upper panel and the faceplate and they're ready to assemble

15 Marshall-style end caps were the closest we could find to the WEM originals. They'll look better once they've aged a bit, but they're a pretty good match for the cleaned-up knobs. This control panel also featured on the earlier V-front Westminster

After leaving it to set for about an hour, I applied Evo-Stik contact adhesive to the back of the top plate and front of the panel and spread it evenly **14**. After leaving the glue for 15 minutes to go tacky, I was able to press the top plate into position and it grabbed immediately.

The bottom strip couldn't be glued onto the cloth, so I drilled two tiny holes at each end and used panel pins to hold the plate in position. Since the pins were very close to the edges, I used a nail punch to prevent the hammer from damaging the plate and the cabinet. The side edges were finished off with white piping from Allparts UK, and once again pins were used to hold it in position.

The original handle had gold end caps, but they were long gone. Exact replacements are no longer available, so I used a modern Marshall-style handle from Allparts UK. It was too long and slightly too wide, but I was able to combine the Marshall-style parts with the original handle. Some sort of protective lacquer made the caps a bit too yellow, but chrome polish knocked the colour back to a more natural gold and cleaned the knobs, too **15**.

Back together

Reassembly was straightforward and the Westminster was soon back in business. It runs pretty hot, too, because there is only one small vent next to the control panel. The tone is unmistakably British with a pretty Vox-like chime at low volume and an angry Marshall-like overdrive that is commendably fizz-free.

The volume and tone controls also interact much like they do on Fender tweeds. The tremolo has a nice feel and speed range, and although you can't adjust its depth, the intensity is about right. A more efficient alnico speaker might open out the treble and provide a bit more volume, but the Celestion sounds really good.

Either way, it's a fantastic little amp and a very pleasant dilemma for Pete to have.

NEXT MONTH...

Huw returns to his ongoing Gretsch project, last featured in the August issue of *G&B*, as he attempts to turn his wood pile into a playable guitar

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Bilt Guitars S.S. Zaftig

A cool semi-solid that takes its design cues from Fender offsets. **CHRIS VINNICOMBE** finds out if they Bilt this pretty for rock 'n' roll...

Like every one of Bill Henss' and Tim Thelen's creations, the S.S. Zaftig is made in Des Moines, Iowa – the Midwestern State Capital that also gave birth to masked metal titans Slipknot and travel author Bill Bryson. Henss and Thelen describe their processes as employing "the latest building techniques as of about 1949", but the S.S. Zaftig's lines are drawn largely from 1960s inspiration, borrowing heavily from the Fender Marauder, Starcaster and Jaguar to create a kind of 'guitar that might have been, but never was', that's similar in spirit to some of Dennis Fano's instruments and Fender's own recent Pawn Shop Series.

"Bill and I started making these out of our repair shop," explains Tim, "so all of our design choices are informed by the need for repairability, which in turn makes for longevity, and that increases the chance that it'll make music for a long time." The pair's interest in offset designs was triggered when they collaborated on a rosewood Jazzmaster-style guitar for Nels Cline in 2008: "That was what kicked us into gear to start exploring offset guitars," acknowledges Tim.

That exploration resulted in the Revelator, a Fender Marauder-inspired model loaded with onboard effects. It has now been joined in the range by the Revelator LS ('less stuff', sans effects), the Volare (a reimagined Starcaster-alike), El Hombre (a kind of mash-up of Gibson SG and vintage Japanese influences) and the generously proportioned, semi-solid Zaftig we have before us.

There are no onboard effects here (custom requests can be discussed with Bill and Tim), but there's plenty going on all the same: Jazzmaster-style wiring on Jaguar-alike control plates governs a pair of Lollar Regal Wide Range-inspired humbuckers wound to a punchy 10.7k while a Mastery Offset Bridge and Vibrato tailpiece offer a beautifully machined, buzz-free upgrade on a vintage-style system. The semi-solid alder body has a solid block that runs from the neck pocket to just behind the bridge and two 0.5-inch legs beneath the vibrato mounting screws. Tim estimates that the guitar is "76 per cent hollow" as a result.

The semi-solid alder body has a solid block that runs from the neck pocket to just behind the bridge

Some detractors may find the lack of a nitrocellulose lacquer finish hard to stomach in this lofty price bracket, but the thin poly Ice Blue Metallic that the Bilt guys have employed here certainly doesn't inhibit resonance (more on that later) and doesn't have that 'dipped in plastic' appearance of some poly-finished instruments, either. >

The Mastery Offset Bridge is a serious improvement on the traditional system found on many Jazzmasters and Jaguars

KEY FEATURES

Bilt Guitars S.S. Zaftig

- **PRICE** £2,489 (inc hardcase)
- **DESCRIPTION** Offset body, double cutaway semi-solid electric guitar, made in USA
- **BUILD** Semi-acoustic alder body, hard maple neck with bound rosewood 9.5-inch radius fingerboard with dot inlays and 21 vintage-style frets, bone nut
- **HARDWARE** Mastery Offset Bridge and Vibrato tailpiece, Kluson vintage-style machineheads
- **ELECTRICS** 2x Lollar Regal humbuckers, master volume, master tone, 3-way toggle pickup selector switch, rhythm circuit on/off, rhythm circuit volume and tone
- **FINISH** Ice Blue Metallic (as reviewed), two or three-tone sunburst, various sparkles and metallics (see website for finish and many other options)
- **LEFT-HANDERS** Yes, no extra charge
- **SCALE LENGTH** 648mm/25.5"
- **NECK WIDTH** 42.5mm at nut, 51mm at 12th fret
- **NECK DEPTH** 20mm at 1st fret, 22mm at 12th fret
- **STRING SPACING** 36mm at nut, 52mm at bridge
- **WEIGHT** 7.9lbs/3.5kg
- **CONTACT** Coda Music 01438 350815
  coda-music.com
  www.biltguitars.com

Anatomy of...

1 Body Talk
At its widest point, diagonally across the lower bout, the Zaftig measures less than an inch shy of a Gibson ES-335's 16-inch body width, yet it never feels unwieldy and balances superbly on a strap

2 Whole Lollar Love
Bill Henss and Tim Thelen are big fans of Jason Lollar's pickups and selected the Wide Range-style Regal units for this instrument. "We have had nothing but amazing luck using Lollar pickups," says Tim. "They do exactly what they are supposed to do every time"

3 Midnight Marauder
'Zaftig' is a North American slang word meaning curvaceous or voluptuous that derives from the Yiddish 'zaftik', itself from 'saftig', the German word for juicy. The curves of the Zaftig's headstock are inspired by the 1966 Fender Marauder prototype. Fender went on to resurrect the Marauder headstock design a decade later for the Starcaster

4 Orange Crush
The Zaftig's rhythm circuit is less woolly than that of a vintage-spec Jaguar or Jazzmaster. Tim explains why: "We use a 500k mini-pot for the volume and a 50k for the tone paired with a .022 Orange Drop capacitor. The stock Fender setup uses a one-meg pot for the volume, which really chokes out the mids and highs"

5 Under The Bridge
The adjustable, twin-saddle Mastery Bridge has become the retrofit bridge of choice for a host of offset-toting stars, including Nels Cline, Bill Frisell, Elvis Costello, Sean Lennon, Troy Van Leeuwen, Thurston Moore, Lee Ranaldo and more. Henss and Thelen's introduction to the brand came via Cline himself: "We were lucky enough to have Nels Cline insist we meet Woody [Mastery mainman John Woodland], now we cannot make an offset without his bridge"

The Lollar Regal Wide Range-style humbuckers are an inspired choice for this guitar

The Zaftig's curvy headstock brings to mind Fender's Marauder and Starcaster

LIKE THIS? TRY THESE...
Fender's current **Starcaster** reissue **£719** differs slightly from the ill-fated yet desirable original, but is far less pricey than vintage examples. The Custom Shop's **Limited Edition 1958 Closet Classic Jazzmaster £3,429** is drop-dead gorgeous and features an RSD bridge with twin brass saddles that's considerably more stable than a vintage-style unit. Made by Dennis Fano, the **Novo Serus J £2,899** features a body made from tempered pine and has mojo to spare, while his former company **Fano**'s **GF6 £2,750** is rated by Rival Sons' Scott Holiday as a Starcaster-killer.

There's visible evidence of a human touch and even if that also manifests itself in the form of a slight scruffiness around the f-hole, we're nitpicking – it's a simply tremendous-looking electric guitar to behold.

In use

We know what you are thinking: a massive headstock and semi-solid construction mean guaranteed neck dive, right? Happily, and perhaps miraculously, this is not the case and the Zaftig is very comfortable to play indeed when strapped on.

Despite the lack of forearm or ribcage/belly contouring, it lives up to its name and proves to be a figure-hugging experience, whether standing or seated. The combination of semi-acoustic air and the Mastery bridge delivers unplugged sustain that's way beyond what we've come to expect from offset solidbody designs – particularly on the D and G string – and bodes well for the Zaftig's electrified performance.

The presence of pickups bearing the surname of the man who literally wrote the book from which many of the modern boutique pickup winders learnt their trade is always reassuring. Plugging into our tweed-y review amp at stage volume is immediately grin-inducing; there's a live, animal edge to the controllable way notes bloom easily into feedback that fans of Neil Young, Wilco, Daniel Lanois and the like will adore, but enough muscularity to ensure that proceedings don't get too thin and scratchy.

A good set of original Wide Range humbuckers with CuNiFe magnets might offer a touch more complexity and richness, but that's not to say these pickups aren't an excellent match for the guitar – we wouldn't change them for a minute.

Up the dirt level and there's a great punch and gritty jangle for indie power-pop and grunge, too, which makes this former mid-1990s teenager very happy indeed. There's more high-end bite here than our reference set of Filter'Trons, but there's a similar harmonic complexity and the Regals inhabit that delicious sonic space somewhere between single coils and PAFs very nicely indeed.

There's a live, animal edge as notes bloom easily into feedback that fans of Neil Young and Wilco will adore

Switching to a blackface-style amp inevitably hollows out the midrange and opens up some of the Zaftig's slinkier, springier tendencies. It proves excellent for Hendrix-y clean rhythm parts and snappy funk. It's even an expressive lead machine, courtesy of both the neck and middle settings' combination of rich depth and bite. Also – whisper it – the rhythm circuit sounds good and is a smooth and usable fourth voice, more useful than the woolly oddity found on vintage-spec instruments. Once again, we're enormously impressed by the smooth action and stability of the Mastery Bridge – if your offset doesn't come with one as standard, it's surely becoming a no-brainer retrofit. Straight out of the case, the Zaftig feels as though it'll stand the kind of right-hand pounding that'll make many a stock Jaguar or Jazzmaster exit the field of play, hobbling bloodied in the direction of the tech's bench.

Given that this writer's preferences lean towards beaten-up nitro finishes, the feel of bare wood, big 1950s neck shapes and jumbo fretwire, why is this slim and glossy section of timber so comfortable and appealing? The bound rosewood fingerboard's 9.5-inch radius certainly helps offset (sorry) the skinny vintage-style fretwire when it comes to overall bend-friendliness but, ultimately, this is just an exceptionally good electric guitar. Sometimes that fact alone tears the rulebook into confetti.

Guitar & Bass VERDICT

+ The white-knuckle experience of a big semi without being unwieldy
+ Excellent range of sounds, from jangle to raucous grit
+ The Mastery Bridge and vibrato work superbly

– Gone are the days when an offset guitar was a money-saving option

If you are looking for a highly evolved, great-sounding offset guitar that blends the best elements of the Jazzmaster and semi-solid experience, this is it

9/10

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D'Angelico EX-DH

D'Angelico carries the iconic brand's distinctive Jazz Age features into the modern era. **HUW PRICE** goes 'bada-bling' with the EX-DH

Martin, Gretsch and Gibson trace their guitar-making origins to the early 20th century and even earlier, but there were other guitar makers of that period whose reputation was equal to, or even greater than those heritage brands that remain familiar to us today. Sadly, only guitar historians, aficionados and guitar hacks seem to remember the likes of Maurer, the Larson Brothers and Stromberg.

D'Angelico guitars were regarded by many as being the finest of the Jazz Age, but until quite recently the name was drifting into obscurity. Based in New York, John D'Angelico's guitars combined traditional archtop building techniques with art deco motifs.

Take one look at those iconic instruments and you'll be imagining skyscrapers, mobster-owned pizza joints and those joyful years between the repeal of prohibition and WWII.

From 1932 until his death in 1964, D'Angelico made just over 1,000 guitars, and originals are highly prized. Brenden Cohen, John Ferolito Jr and Steve Pisani acquired the D'Angelico Guitars trademark in 1999 and the brand was officially relaunched in 2011. The guitars are no longer made in tiny numbers in a cramped workshop between the Hudson and East rivers. These days, they're factory built in various facilities in South Korea, California and Michigan.

In the guitar world, the term 'standard' has traditionally been used to describe models that occupy the middle ground of a manufacturer's catalogue, usually meaning fewer features and a lower level of decoration. Since the EX-DH is part of D'Angelico's Standard Series, it's clear that normal rules don't apply here. Pretty much every part that could be gold plated, pearl inlaid or multi-bound already has been, so the Standard Series models get Kent Armstrong humbuckers rather than Seymour Duncans, ordinary fretwire and a three-way rather than six-way switch.

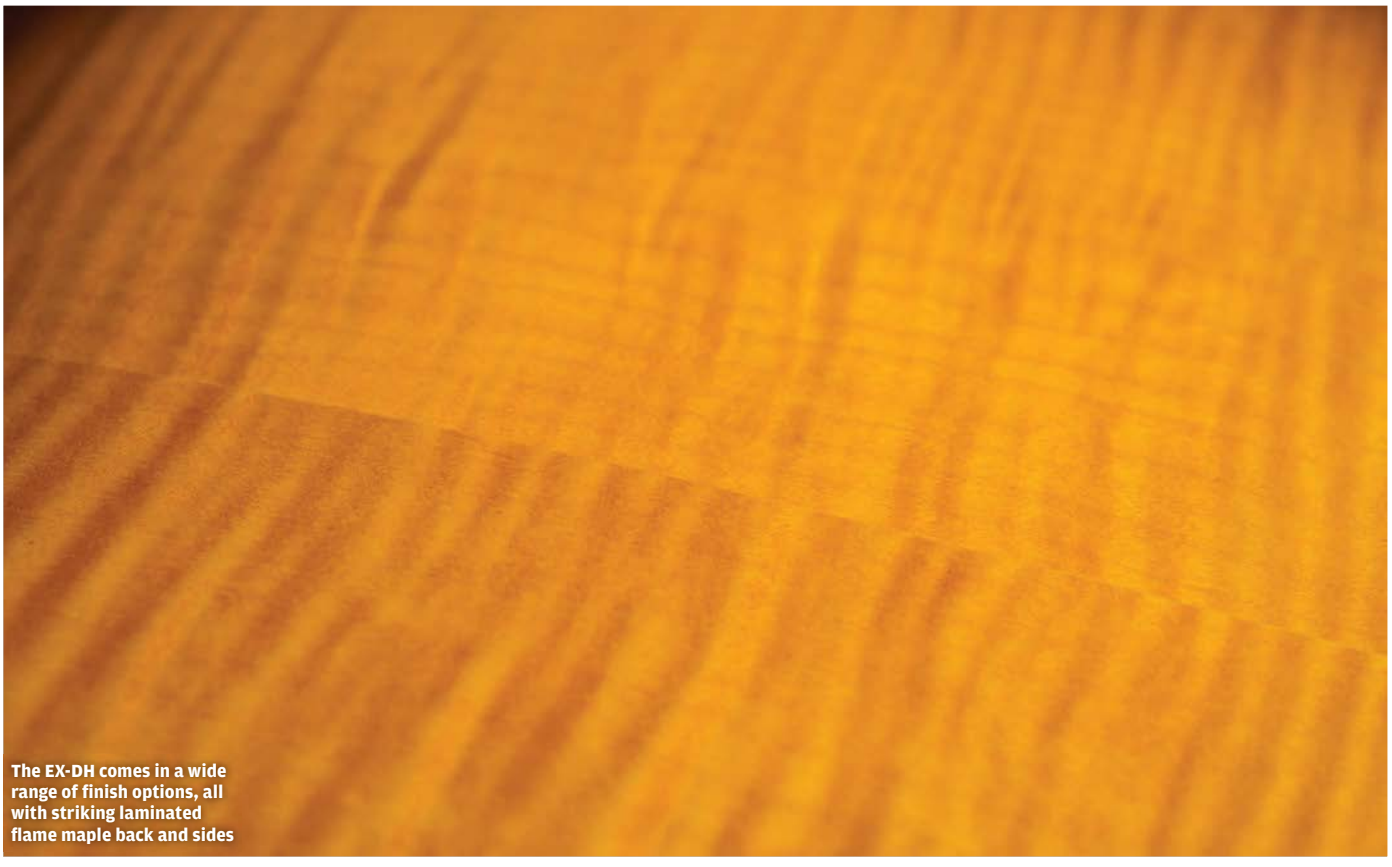
The Deluxe versions are available only in black, but the Standards come >

Despite being part of D'Angelico's Standard Series, the EX-DH is lavished with ostentatious appointments

KEY FEATURES

D'Angelico EX-DH

- **PRICE** £1,449
- **DESCRIPTION** Hollow six-string electric guitar, manufactured in Korea
- **BUILD** Laminated spruce top, laminated flame maple back and sides, set maple neck with walnut centre strip and slim C profile, rosewood fingerboard with pearl block markers and 22 frets, multi-ply cream/black binding
- **HARDWARE** Stepped trapeze tailpiece, tune-o-matic bridge, Grover Super Rotomatic tuners
- **ELECTRICS** Kent Armstrong humbucking pickups, individual volume and tone controls, three-way selector switch
- **SCALE LENGTH** 648mm/25.5"
- **NECK WIDTH** 42.5mm at nut, 53.5mm at 12th fret
- **NECK DEPTH** 19mm at first fret, 22mm at ninth fret
- **STRING SPACING** 35.5mm at nut, 52mm at bridge
- **WEIGHT** 3.6kg/7.9lbs
- **LEFT-HANDERS** No
- **FINISHES** Sunburst, Amber, White, Trans Black, Black, Natural
- **CONTACT** Face +32 3 844 6797 **dangelicoguitars.com**



The EX-DH comes in a wide range of finish options, all with striking laminated flame maple back and sides

LIKE THIS? TRY THESE...
Ibanez has a good name among jazz players, and the **AF200-BS Artstar Prestige £1,775** has a laminated flame maple body. For a rockabilly vibe, the **Godin 5th Avenue £1,251** and **Guild X-175 £880** are Bigsby-equipped and the **Peerless Journeyman £1,061** has an all-solid body with a spruce top and maple back and sides.

in a wide, and slightly surprising, choice of colours. Only the DH's sister guitar, the EX-DC, is available as a left-handed version, but the finish options narrow to Sunburst and Natural.

The EX-DH is far closer to what you might expect a D'Angelico to be than other models in the series, with step motifs on the pickguard, truss-rod cover, tuners and tailpiece. But most significantly this is a genuine 16-inch jazzbox with parallel bracing and no soundposts or centre-block. The top is laminated spruce and the back and sides are laminated flame maple.

Although it's fully-hollow, the EX-DH is surprisingly weighty, and it's tempting to think the Trump-esque quantities of gold must have something to do with that. The very nice quality rosewood fingerboard merits a special mention and is finished to a fairly high standard. However, some purists may feel slightly disappointed that the pragmatic approach of supplying standard humbuckers and a tune-o-matic bridge undermines the massive effort that has clearly gone into recreating the other period-style parts.

In use

Despite not being a loud or percussive-sounding archtop, the EX-DH is fun to play unplugged and it has a smooth, mellow and even tone. The review guitar arrived with a high-ish action and fairly heavy strings. It had at least enough oomph to get the top moving and provide single notes with a rounded and full-bodied tone.

The EX-DH has fairly hot pickups – in fact, they're both wound to 7.8k. However, the archtop geometry ensures they're a fair distance away from the strings, and that means they sound far less aggressive than they might on an ES-335-style thinline. The tone is also fairly transparent and dynamic. As you would hope, the deep, fully-hollow body ensures that the EX-DH's tone is complex and nuanced with a pleasing woodiness.

Despite not being a loud or percussive-sounding archtop, the EX-DH is fun to play unplugged, with a smooth, even tone

We found the EX-DH most enjoyable when played through blackface-style amps with a preset degree of midrange scoop. This seems to clear up the sound by de-emphasising the EX-DH's dominant midrange frequencies. Cleanish settings deliver mellow jazziness, horn-like jump blues honk and pleasing chord melody tones. With added overdrive, you can get an early Chuck Berry-style grind and some sweetly singing lead tones, so long as you don't mind some mush in the bass end. There's even a fair amount of sustain with a nice and even decay.

The EX-DH is a solidly made guitar, in fact it's perhaps a bit too solid. A lot of effort has been put into the appearance, arguably with some compromise of playability and tone, but electronics can always be upgraded, string gauges can be swapped and playing setup can be tweaked. Ultimately, it's a guitar that seems to have been designed and built to appeal to players who are drawn primarily to D'Angelico's visual identity rather than Jazz Age tone or playing feel. It certainly delivers on the visual front and, paired with the right amplifier, is no slouch sonically, either.

Guitar & Bass VERDICT

+ Easy playability and decent tone
+ Striking looks
+ High-quality tuners

– Quite heavy
– Pickups rather midrange-heavy

The acoustic body gives the pickups plenty to work with on this nicely-finished archtop with a Jazz Age aesthetic

8/10

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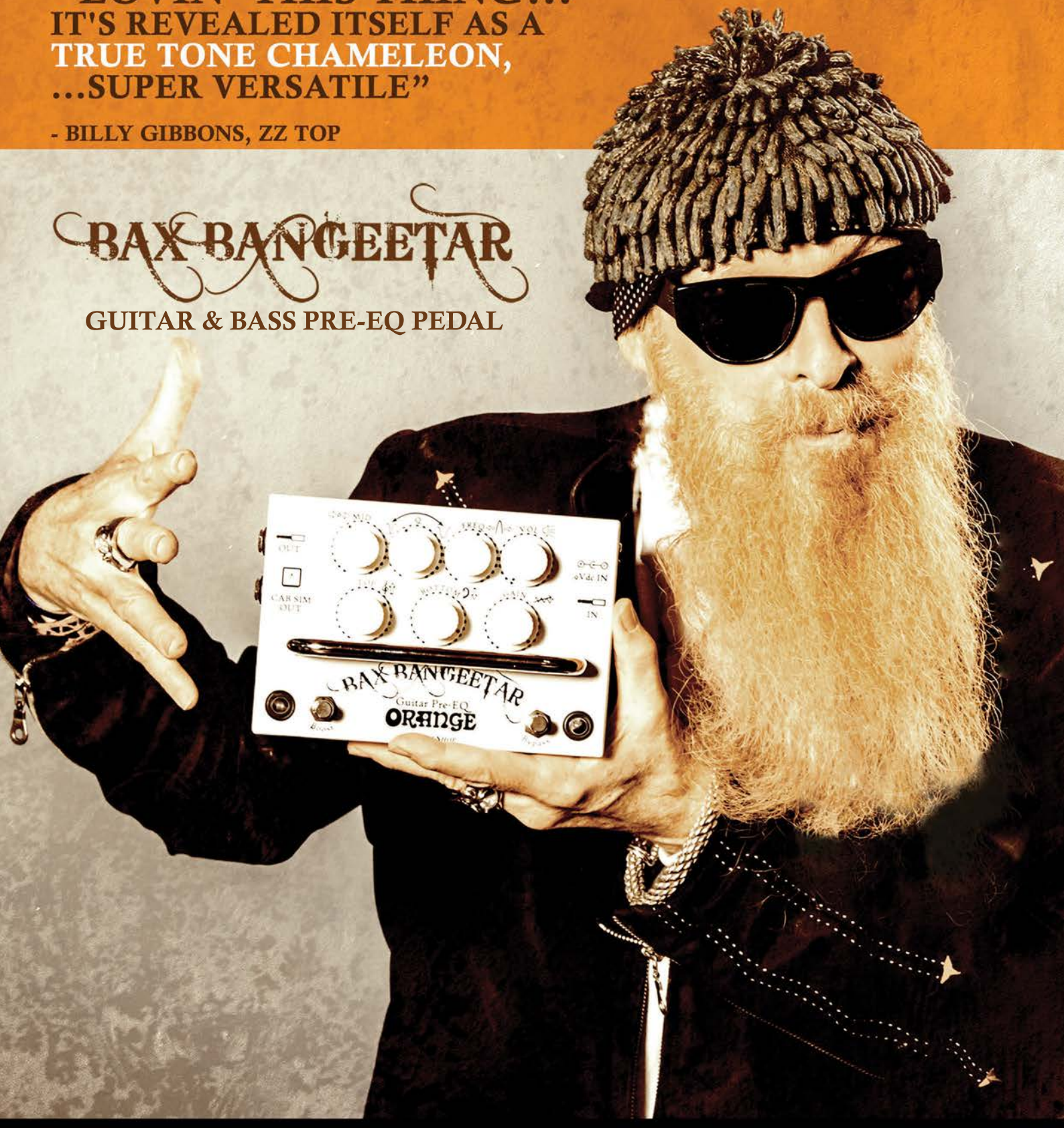

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Vigier Excalibur Supraa

The new addition to the Supra family adds more than just an extra letter to its name. **DARRAN CHARLES** finds out if it gets an A+

It's remarkable to think that the Vigier Excalibur has now been around for 25 years. In that time, various incarnations of the model have found their way into the hands of players as influential as Shawn Lane and Guthrie Govan, but perhaps the French company has still not achieved the household name status of other souped-up S-type producing brands.

There are already more than 10 different sub-categories in the Excalibur range which, aside from the Shawn Lane signature model, more or less feature the same spec: 10/90 carbon reinforced neck, stainless steel frets, string damper, etc. The new-for-2016 Supraa differs from its lesser-vowelled brethren the Supra in that instead of the usual trio of DiMarzios, it features Vigier's own Amber hand-wound pickups, which have been voiced specifically for the company's guitars.

The Supra/Supraa branch of the Excalibur range is one of the few that offers a matt finish. This won't be to everyone's taste, but the Urban Blue on our model is anything but dull and lifeless, with the varying hues really popping. A thicker gloss finish would likely be more hard-wearing, but there are resonance benefits to be had from fewer coats of paint, and we think this guitar looks very cool indeed.

Another polarising feature is present and correct: the zero fret system, though in recent years Vigier's version has undergone a few changes. Instead of being one single fret, it has now been divided into six equal parts, therefore rendering it necessary to replace only one part at a time should any wear occur. In our experience, zero-fret wear – usually in the form of a groove/notch forming underneath one of the thinner strings, ultimately resulting in an annoying 'ping' when the string travels in and out of this groove – usually takes at least 12 months to show any signs of developing.

A recent addition to the Excalibur range is a string dampener, which is a small piece of Velcro-like material spanning the width of the fretboard behind the nut. This has been devised to be a permanent replacement for the hairbands that some guitarists wrap around the headstock in an attempt to prevent harmonics ringing out above the nut.

The neck is a slim C shape: slightly slimmer than a typical modern Strat, but certainly not in Ibanez Wizard territory. The dimensions seem to encourage a thumb-behind-the-neck approach, and therefore could be suited to the more 'technical' player.

As we've come to expect from Vigier, a very low action can be achieved quite easily thanks to its 300mm radius and impeccably finished stainless steel frets. All Vigier guitars are fitted with the company's pioneering 10/90 carbon reinforced necks (for those unfamiliar with Vigier necks, they have a carbon reinforcement bar rather than a traditional truss rod). The strength of the carbon reinforcement brings >

The neck dimensions encourage a thumb-behind-the-neck approach, and could be suited to more technical players

The main change from the existing Supra model is the presence of hand-wound Amber pickups

KEY FEATURES

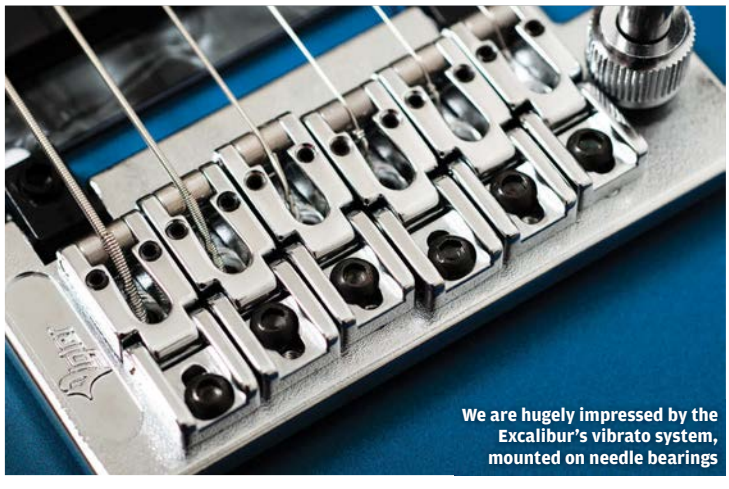
Vigier Excalibur Supraa

- **PRICE** £1,739 (inc hardcase)
- **DESCRIPTION** Double-cutaway electric guitar, made in France
- **BUILD** Naturally aged alder body with bolt-on maple neck featuring 10/90 System (10% carbon, 90% wood), rosewood fingerboard with stainless steel frets & Teflon nut with zero fret
- **HARDWARE** Schaller M6-2000 chrome locking tuners/Vigier hardtail (chrome)
- **ELECTRICS** Amber hand-wound humbuckers (bridge & neck), volume, tone, five-way blade
- **SCALE LENGTH** 650.24mm/25.5"
- **NECK DEPTH** 19.5mm at first fret, 23mm at 12th fret
- **NECK WIDTH** 42mm at first fret, 52.8mm at 12th fret
- **STRING SPACING** 53mm at bridge, 35mm at nut
- **WEIGHT** 3.56kg/7.8lbs
- **FINISHES** Urban Blue (as reviewed), Anti Tobacco, Antique Violin, Black, Cherry Sunburst, Clear Black, Clear Purple, Clear Red, Natural Alder Matte, Normandie Blue, Normandie Red, Pearl White, Retro White, Urban Blue, Urban Metal
- **CONTACT** High Tech Distribution UK
  www.htd-uk.com
  01722 410002

The zero fret on the Excalibur is now divided into six equal sections rather than the previous single unit

LIKE THIS? TRY THESE...

Fender's **American Elite Stratocaster Shawbucker** **£1,487** is a fully modernised Strat featuring a meaty humbucker and easy-access truss rod adjustment wheel, while the **Suhr Modern Satin** **£1,799** is a stripped-down but versatile S-type sporting Suhr-branded pickups


We are hugely impressed by the Excalibur's vibrato system, mounted on needle bearings

If it was Patrice Vigier's intention to make the Amber humbuckers more punchy, it's mission accomplished

with it a slightly tauter string tension. This may not be noticeable to some players and could be addressed by employing a lighter string gauge, but you may not necessarily experience the same tension that you would expect from your usual brand/gauge of strings. The unwaveringly straight neck that the 10/90 design guarantees, however, makes it the ultimate guitar for any frequent-flyer musician, because whatever the temperature or climate, the neck retains unerring stability and offers a consistency of feel that very few manufacturers can claim to match.

In use

If it was Patrice Vigier's intention when designing the Amber humbuckers to make them more punchy and aggressive than the usually favoured Dimarzios, then it's a case of 'mission accomplished'. The bridge pickup is bright and aggressive, pushing the high frequencies into the sonic territory that we'd expect from a maple 'board Strat with a high-gain bridge humbucker. We get the impression that lead work was very much in mind when voicing the pickups, such is the Supraa's ability to scythe through the mix with single-note lines.

The clean sounds are diverse, with the "naturally dried" alder body exerting its influence and providing the glassy clean sounds you would expect from a souped-up Fender Strat, especially on positions two and three of the five-way selector. However, if you're the type of player who tends to achieve their cleaner tones by rolling off the guitar volume on a slightly overdriven amp setting, then you may be slightly disappointed: rolling off the volume tended to dull the frequencies, and we found the sound to be less dynamic than we were expecting.

A special mention has to be given to the perfect balance of volume when switching between each of the five positions. This is a feat achieved rarely on a three-pickup guitar with a five-way switch, but we noticed that the polepieces on each pickup have been adjusted individually – which would indicate that a great deal of time was spent optimising volume consistency following manufacture.

The Vigier vibrato system, mounted on needle bearings to minimise friction, is responsive and stable, and remains one of the best non-locking vibratos out there. Try as we did, tuning remained unaffected by even the most vigorous of whammy work.

Fans of zero-fret guitars will laud the consistency in volume when incorporating open strings with fretted notes during chordal work (given that, essentially, there are no open strings); detractors will complain for the exact same reason. There is something innately satisfying about the sonic scare that a quick pluck of the B and E strings can provide when playing blues-rock rhythm material; but then for more complex higher-register chords, the aforementioned consistency of volume offered by a zero fret could prove invaluable.

Whether or not the Excalibur is worthy yet of the 'classic' tag, it without doubt remains one of the most innovative guitar designs to have been released in the last 20 years. Traditionalist players are certainly unlikely to be seduced by its modern aesthetics and high-output pickups, but then Vigier has other models in its catalogue that better cater to their requirements.

Guitar & Bass VERDICT

+ The ultimate pro guitar for the travelling musician
+ Great platform for high-octane lead playing
- Slightly thin neck may not appeal to some players

If you've not yet played a Vigier, and focus on lead playing, the Supraa could prove to be a game-changer for you

8/10

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Martin 00-17S & DC-18E

Something old, something new... and a lot more besides. **HUW PRICE** samples two new offerings from Pennsylvania's finest

Here we have two Martins from opposite ends of the comapny's style spectrum. The only shared features are spruce/mahogany bodies – one is an old-looking guitar with hidden modern features, while the other is a modern-looking guitar with hidden vintage features.

00-17S

I bow to no one in my enthusiasm for slotted headstocks, but I have to admit life is a lot easier with a solid headstock like this one, and the Golden Age open-gear tuners provide vintage looks with modern stability, accuracy and feel. The slope-shouldered body is resolutely old school, but the neck is slim and truss rod is adjustable. Despite the Dustbowl vibe of the matt finish, absence of grain filler and lack of decorative flourish, the build quality is pin neat, although Martin hasn't rounded over the fret ends above the body join.

In use

It's love at first strum for this guitar hack. The 00-17S has everything I generally look for in a vintage-style Martin, plus a lot of the things I would usually like to hear more of. It has the hair-trigger response of a vintage featherweight, with the airiness and delicately ethereal treble that, for many, are quintessential hallmarks of a small-bodied classic Martin.

While these are laudable qualities, some find the rolled-off lows and underpowered midrange that go along with these models can be a frustrating trade off. However, the 00-17S is distinguished by a nicely full and forward midrange and a low end that retains power and solidity down to drop C.

Maybe it's the shorter scale length that contributes to the easy playing feel and the large extra helping of warm woodiness, but the 00-17S puts me in mind of the 1930s Gibson L-00 we recently featured. In fact, everything about the look and sound screams vintage – but the feel is quite contemporary. Rather than the fat and clubby neck or even the V profile you might expect, the 00-17S has a relatively slim C-shaped neck. Any initial disappointment was quickly dispelled by the 00-17S's superb playability.

This isn't an especially loud guitar, but it sustains for eons and the string-to-string balance is superb. For fingerstyle, it makes life easy because strummed chords and picked notes are at relatively similar volume: it can make some of us sound like we have better technique than is actually the case.

Strummed or picked, the 00-17S seems to handle everything with poise. It's an utterly addictive little guitar that kept me amused for hours as I experimented with capos, slides and various tunings.

There are shades of nylon strings, dobro and parlour that evoke an undeniably retro vibe but, naturally, some players may crave a little more power and upper-fret access.

Even so, the 00-17S is what it is, and it's one of the most distinctive and enjoyable Martins I've ever encountered. With the caveat that this guitar arrived with half-dead strings – only after it had been forcibly removed from the sweaty hands of a certain editor – I can't come up with anything negative to say about it.

DC-18E

Despite appearances, the DC-18E is, like the 00-17S, a mixture of old and new. Lurking under the solid Sitka spruce >

The 00-17S sports vintage-style Golden Age open-gear tuners

LIKE THIS? TRY THESE...

00-17S

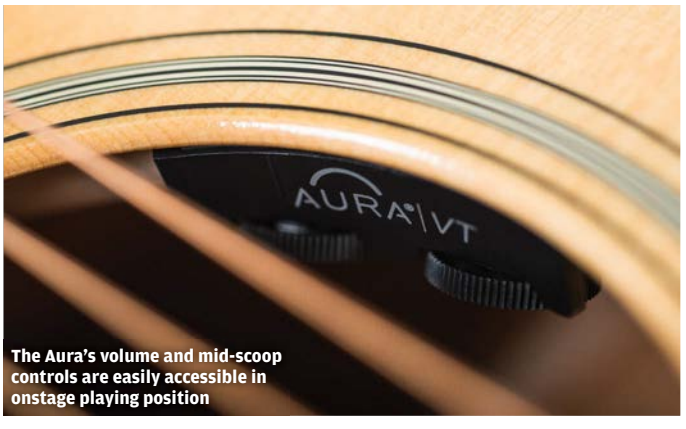
The **Collings Waterloo** **£1,999** comes with ladder or X bracing and other options include T-bar reinforced or truss-rod-installed necks. The recently upgraded **Gibson L-00** **£1,699** has a gloss sunburst finish and an LR Baggs Element VTC pickup system installed.

LIKE THIS? TRY THESE...

DC-18E

A Taylor isn't the obvious choice for a more retro option, but the **510e** **£2,001** features a V-profile neck with a slotted headstock and an Expression II pickup system. The **Bourgeois Country Boy** **£3,599** has no pickup system or cutaway, but it has Waverly tuners and an Adirondack spruce top.

The 'enhance' control on the treble side of the DC-18E's soundhole adds body-sensor signal



The Aura's volume and mid-scoop controls are easily accessible in onstage playing position

The 00-17S's square-tapered headstock with Script Authentic 1933 Overlay logo

top is a forward-shifted X brace, with scalloping and Martin has even used vintage 18-spec tortoise binding. The neck's a decent width, and suits fingerstyle and strumming equally.

A Fishman Aura VT Enhance system is installed with an under-saddle transducer, a body sensor and a single digital dreadnought 'model'. A volume and mid-scoop control is mounted under the bass side of the soundhole and an 'enhance' control on the treble side adds the body sensor to the mix.

In use

The DC-18E is a very good dreadnought and although it's not as exceptional as the 00-17S, I do admire its bold and authoritative tone. The bass is deep, warm and nicely controlled, but not designed for sheer power. The treble rings clear without sounding pingy or brittle and midrange is more full and forward than is often the case with this design. Again, the balance and string-to-string definition is superb and the acoustic tone has all the hallmarks of a pedigree instrument.

It's also about as far removed from the 00-17S as it could possibly be. Where the 00-17S oozes retro cool, the DC-18E is a more generic and general-purpose workhorse. That much is probably apparent from the cutaway and the onboard electronics. While I would have no compunctions about mic'ing this guitar up in the studio, its onboard electronics mark it out as a stage performer every bit as much as a straightahead acoustic.

The Aura system is very impressive, because output level is high, noise level is vanishingly low and it sounds more like an acoustic guitar than an acoustic guitar with a piezo pickup. The DC-18E is also remarkably feedback resistant for an all-solid guitar.

The tone control acts by scooping the mids, which makes sense for fine tuning a dreadnought model. There is a sense that the highs have been slightly enhanced when the plugged and unplugged tones are compared and even at minimum scoop, some of the midrange is lost.

Even so, as plug-in-and-play electro-acoustic tones go, the one offered by the Fishman Aura is a fantastic starting point and, to these ears, just about pips Taylor's Expression System. It just sounds more authentically 'acoustic' in tone in a direct comparison.

If I were operating the mixing desk, or an onstage acoustic amp, I would probably roll off a little of the treble to zone in on the natural tone of the instrument. Of course, you can blend in the body sensor signal and it does add a certain acoustic airiness and natural dynamic response, but a lot of brightness comes along with it.

I found that just a hint was best for enhancing the Aura tone, because as you mix in more of the sensor, there is a sense of some weird phase shifts occurring in the mids. However, it does work well if you employ a more modern style, where the guitar body is used to create percussive sounds.

So here we have two entirely different Martins that very successfully achieve what they were designed to do. The DC-18E impresses, both acoustically and electrically, and I suspect its appeal will be wider. However, I must say that of the two instruments on review, the 00-17S steals the show for me.

KEY FEATURES
00-17S

- **PRICE** £1,795
- **DESCRIPTION** All-solid acoustic guitar, made in the USA
- **BUILD** Sitka spruce top, mahogany back and sides, glued mahogany neck, scalloped X bracing, ivoroid front binding, rosewood fingerboard and bridge, plastic bridge pins, bone nut and compensated bone saddle
- **HARDWARE** Golden Age open-gear tuners (aged)
- **ELECTRICS** N/A
- **LEFT-HANDERS** Yes
- **FINISHES** Whisky Sunset Sunburst and Black Smoke
- **SCALE LENGTH** 631mm/24 7/8"
- **NECK WIDTH** 44mm at nut, 54mm at 12th fret
- **NECK DEPTH** 18mm at first fret, 21mm at 9th fret
- **STRING SPACING** 38.5mm at nut, 54mm at bridge
- **WEIGHT** 1.6kg/3.52lbs

Guitar AWARD EXCELLENCE 10/10

Guitar VERDICT

+ Surprisingly full bass
+ Excellent string-to-string balance
+ Easy playability
+ Very woody midrange
+ Fantastic vintage vibe
+ Superb tuners

– Fret ends not rounded above the body join

An unforgettably good small-bodied Martin at a relatively affordable price for a USA-made model, with vintage looks and tone, but modern playability

10/10

KEY FEATURES
DC-18E

- **PRICE** £2,765
- **DESCRIPTION** All-solid electro-acoustic guitar, made in the USA
- **BUILD** Sitka spruce top, mahogany back and sides, glued mahogany high-performance taper neck, forward-shifted scalloped X bracing, tortoise body binding, ebony fingerboard and bridge, plastic bridge pins, bone nut and compensated Tusq saddle
- **HARDWARE** Grover open-gear tuners
- **ELECTRICS** Fishman Aura VT Enhance
- **LEFT-HANDERS** Yes
- **FINISH** Gloss body and satin neck
- **SCALE LENGTH** 644mm/25 3/8"
- **NECK WIDTH** 44mm at nut, 54mm at 12th fret
- **NECK DEPTH** 20mm at first fret, 22mm at 9th fret
- **STRING SPACING** 38.5mm at nut, 54.5mm at bridge
- **WEIGHT** 1.975kg/4.35lbs
- **CONTACT** Westside Distribution 0141 248 4812 **www.martinguitar.com**

Guitar VERDICT

+ Solid bass
+ Good string-to-string balance
+ Nice mix of the traditional and the cutting edge
+ Fine-sounding pickup
+ Impressive feedback resistance
+ Sweet treble

– Feels slightly heavy and overbuilt

A well-made guitar with striking aesthetics and a fine-sounding pickup system, perfect for onstage use by the contemporary singer-songwriter

8/10

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Peavey 6505 Piranha

Like the famously toothy fish, Peavey's new Piranha promises lots of bite for its tiny size... **RICHARD PURVIS** jumps right in

Will Peavey stop at nothing? First, its fiendish scientists pointed their shrink ray at three of the company's most popular amp ranges to create the 20-watt Mini Head (MH) range. Now they've turned that dastardly ray up to full power and created an even smaller version of the mighty 6505, promising full-on metal tones in a box the size of a hamster's coffin.

Actually, they didn't use a shrink ray. They just took out the 6505 MH's EL84 output stage and went solid-state, keeping a single ECC83 in the preamp for that all-important valve overdrive. This is the same move Orange made in coming up with the Micro Terror, so it's a proven recipe for ultra-portable rock power. The 6505 Piranha is still rated at 20 watts, but the format – and price – might make it a better choice than the MH for home practice.

There's a little reference to the 6505 series' distinctive front panel in that beehive grille, which adds to the overall air of meanness. And check out the channel switch: it's crunch or lead, with nothing as wimpy as a clean or rhythm option. Next to that, we find controls for preamp gain, master volume and EQ – but the latter is no simple treble filter. It's marked 'notch' at one end and 'full' at the other, which calls to mind another Orange trick: the mids-contouring shape control seen on, among others, the Micro Dark.

You also get those two modern practice amp staples – an aux input for your smartphone or mp3 player and a headphone output for your wall-thumping neighbours – while the rear panel hosts a buffered effects loop and a single speaker output.

There's more than enough distortion here for heavy chord chugging and howling lead runs, ancient or modern

In use

Starting with the crunch channel, the amp whooshes into life with a vampiric red glow – courtesy of three LEDs hidden inside the chassis – and an alarming amount of hiss. It settles down a bit when you turn the volume up away from zero, and hardly gets any louder after that, but this is by no means a noiseless amp.

With the gain around halfway, the rock-but-not-metal tones are decent if a little scratchy. The EQ control certainly broadens your options: all the way round to 'notch' it's moderately scooped, while at the other extreme it honks almost like a stuck wah. Everything makes more sense when you whack the gain around to full – there's more than enough distortion here for heavy chord chugging and howling lead runs, ancient or modern.

There's no footswitch input, so we need to prod the little white button to engage the lead channel. This ups the gain in a big way. It's edgy but well balanced, and keeps on getting hairier all the way up to maximum – with the right cab, you can get some seriously big noises out of this thing. The EQ control now becomes more influential than ever, with crisply rumbling djent tones at one end and old-fashioned hair metal at the other. Pick your spot along that line and get rocking!

Guitar & Bass VERDICT

+ High-gain sounds are full and fearsome
+ Useful mids-shaping EQ control
+ Not much bigger, heavier or more expensive than the average stompbox

- Background hiss
- No clean channel
- Headphone sound is rather harsh

An entertaining, if limited, bedroom amp with huge amounts of gain to play with

7/10

KEY FEATURES

Peavey 6505 Piranha

- **PRICE** £185
- **DESCRIPTION** 20-watt hybrid head, made in China
- **VALVE** 1x ECC83
- **FRONT PANEL** Guitar input, crunch/lead switch; gain, EQ, volume; aux in, headphones out
- **REAR PANEL** Speaker output (4 ohms minimum), FX loop send and return, power switch
- **DIMENSIONS** 180x145x80mm
- **WEIGHT** 1.1kg/2.4lbs
- **CONTACT** Barnes & Mullins 01691 652449 **peavey.com**

LIKE THIS? TRY THESE...

The Piranha's most obvious rival is the **Orange Micro Dark £129**, another diminutive rock machine with a single preamp valve. The **VHT i-66 £158** adds app-controlled digital modelling, while a more radical alternative is the Nanotube-powered **BluGuitar Amp1 £549**.

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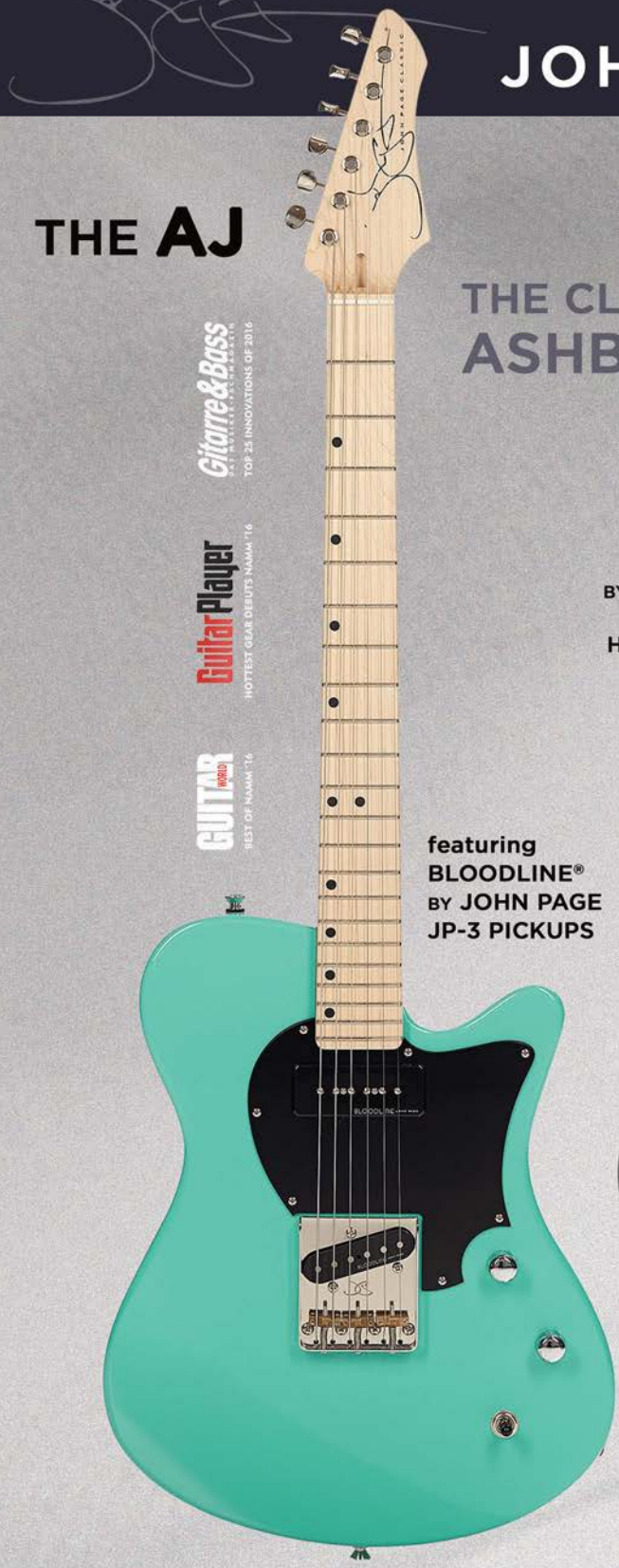

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Orange Two Stroke & The Amp Detonator

Orange has tripled its stompbox range with this fruity yet functional duo... **RICHARD PURVIS** feels his creative juices flowing

Will Orange's dainty dabble in the pedal market turn into an all-out assault? Following on from last year's Bax Bangeetar parametric EQ/preamp, the NAMM 2016 show saw the arrival of these two smaller units from the British amp heavyweight: a boost pedal with a whole lot of tonal flexibility, and a temptingly titchy active ABY switch.

Well, 'titchy' might be pushing it. They're smaller than the seven-knob Bax, but these are still hefty chunks of hardware featuring metal enclosures with a bar across the top to protect the controls. Even if, ahem, one of them doesn't have any controls... anyway, it looks nice and rugged. Other features common to both boxes include grippy textured plastic on the bases, recessed side panels to give the jack sockets a bit of shelter, and LED status indicators the size of a horse's eye.

If you are already happy with your base tone, the Two Stroke can be used as a simple clean boost pedal: zero on the Oil gauge is unity gain, maximum is 12dB of added power. But it's the other four controls that really give this pedal its identity. They bring into play a two-band active EQ section, offering up to 18dB of cut or boost centred at two different frequencies, selected with the lower knobs: Lo goes down to 120Hz and Hi goes up to 8.5KHz, with a substantial crossover around the 1K mark.

The Amp Detonator, despite having a name that might make you worry for the safety of your backline, is potentially an even more useful tool. Why would you want an active ABY switch? Well, anyone who's gigged with two amps using a passive switch knows that signal degradation over the length of three cables is just one of several potential issues. Orange's solution is a buffered unit promising maximum tonal purity through both of its low-impedance outputs; B is isolated with a transformer to prevent hummy earth loops, and there's a button for reversing its polarity in case of phase cancellation.

In use

With the hi and lo cut/boost controls safely at noon, the Two Stroke really is about as uncoloured a clean boost as you'll ever hear – and while 12dB isn't going to tear anyone a new earhole, it's enough for most real-life purposes. The EQ section isn't fully parametric, but it's been voiced so musically that you're unlikely to pine for a missing Q control. Humbuckers slimmed down and brightened up, single coils fattened and de-spiked, pretty much anything made super-scoopy or hyper-honky – this thing does it all, and it's as good for subtle studio tweaks as it is for radical sound-sculpting.

All we really need to say about the Amp Detonator's performance is that it works exactly as it should, sending beautifully crisp tones to both amps and allowing seamless, pop-free switching from one to the other, or to both. Take it out of the circuit, plugging straight into your 'A' amp with a single cable, and you'll really struggle to hear the difference – which is more impressive than you might realise.

And if you're wondering how a single LED can handle three different statuses, there's a tri-colour unit hiding behind that blobby window: green for A, red for B, blue for both. What, no orange?

LIKE THIS? TRY THESE...

Other options for tone-tweakable boosting include the **Stone Deaf PDF-2 £139** and **Seymour Duncan Pickup Booster £109**. Those after an active ABY switch might also consider the **TwinStomp Active A/B-Y MkII £165** or the **Tonebone Twin City £137**.

KEY FEATURES

Two Stroke

- **PRICE** £119
- **DESCRIPTION** Boost EQ pedal, made in China
- **CONTROLS** Hi boost/cut and frequency (850Hz-8.5KHz), Lo boost/cut and frequency (120Hz-1.2KHz), Oil (clean boost level); bypass footswitch
- **FEATURES** Buffered bypass; powered by 9v battery or 9-12v DC adaptor (not supplied)
- **DIMENSIONS** 130mm(d)x95mm(w) x65mm(h)
- **CONTACT** Orange Amps 020 8905 2828 **www.orangeamps.com**

Guitar & Bass VERDICT

+ Works really well as a traditional clean boost pedal
+ Can improve tone at both ends of the EQ spectrum
+ Road-ready metal build
- Ours had a slightly patchy paint job

More 'utilitarian' than it looks, the Two Stroke is extremely effective as a short cut to extra tonal versatility. More stompboxes soon please, Orange!

8/10

KEY FEATURES

The Amp Detonator

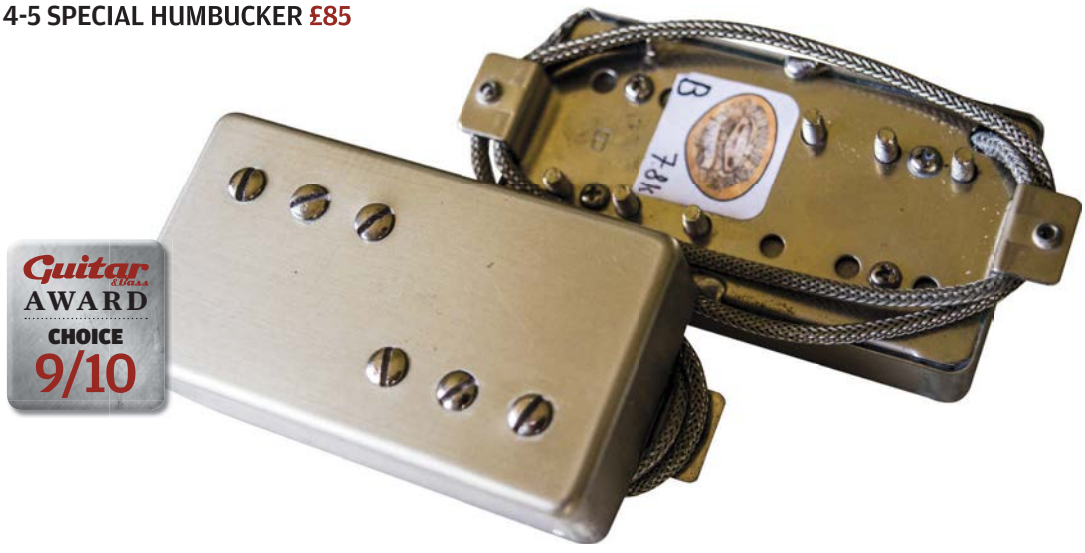
- **PRICE** £119
- **DESCRIPTION** Active ABY pedal, made in China
- **CONTROLS** Footswitches for 'A or B' and 'one or both', phase push-button
- **FEATURES** Buffered outputs, channel B transformer-isolated; powered by 9v battery or 9-12v DC adaptor (not supplied)
- **DIMENSIONS** 130mm(d)x95mm(w) x65mm(h)

Guitar & Bass VERDICT

+ Ultra-pure buffered outputs with useful phase switching
+ Small in footprint and price
+ Isolated B output means no earth-loop issues
+ Pop-free channel switching
- It's not the prettiest unit ever

A solid piece of kit that's been well designed to do an unglamorous job quite brilliantly

9/10



Guitar & Bass AWARD CHOICE 9/10

House Of Tone House 4-5 Special Humbucker

Last year's House Special set showed a knack for tricky vintage tones. **HUW PRICE** asks, can House Of Tone create something new?

KEY FEATURES

House Of Tone House 4-5 Special Humbucker

- **PRICE** £85 each or £170 per set, plus £10 per cover
- **DESCRIPTION** PAF-sized humbucking pickup, made in the UK
- **SPECS** Plain enamel magnet wire, alnico V and alnico IV magnets, 3x3 adjustable polepieces, medium wax potting
- **CONTACT** House Of Tone Pickups 07791691251 **houseoftonepickups.com**

At first glance, this may look like another set of Fender Wide Range repros, but it's far from that. The 4-5 Special is a design unique to Chester-based pickup maker House of Tone because it has two separate magnets rather than the single central magnetic bar employed in PAF-style humbuckers. What's more, two different grades are used – A4 and A5 – to treat the bass and treble strings separately.

There's no slug bobbin and screw bobbin. Instead, screws are arranged in a three plus three arrangement, with non-ferrous slugs focusing the magnetic field over the adjacent screws to make the field narrower and provide greater inductance for each trio of strings.

The DC resistance readings are 7.9k (bridge) and 7.5k (neck), and House Of Tone uses vintage-style braided hookup wire. If you prefer the uncovered look, the 4-5 Special is available with double black, double cream or zebra bobbins. Cover options include 3x3, open top, closed top and a Filter'Tron-style H gate in chrome, nickel, raw nickel or gold.

In use

Our ears are attuned to bright-sounding PAFs and PAF replicas, but the 4-5 is an even brighter pickup. Although it has some PAF attributes, such as extreme sensitivity, the ability to retain clarity at lower volume settings and an uncanny knack of hanging on to notes as long as you like, you don't hear any quack from the bridge position or pronounced woodiness from the neck.

The output is fairly high, so the 4-5 has no problem pushing a valve amp into overdrive. Through vintage-style amps, the plain-string response puts us in mind of Gibson Firebird-style mini humbuckers because of the wide-open treble response, chime and slightly metallic cut. The wound strings sound softer and warmer, but are nicely focused. Unlike most humbuckers, the 4-5 doesn't have pushed mids. Instead, there's a very even frequency response that allows complex chords and tight note clusters to come through without sounding muffled or indistinct. String-to-string balance is also very even, although some may perceive this as a slight lack of sonic character. On the plus side, it does open up areas where using conventional humbuckers may be disadvantageous.

The 4-5 produces a clear, balanced and smooth voice that gels particularly well with modulation and ambient effects

In clean mode, the 4-5 produces a clear, balanced and smooth voice that gels particularly well with modulation and ambient effects. These characteristics carry over to scythe through high gain and fuzz – where so many humbuckers sink in the mud.

The stock 4-5 gets a medium potting, so there is a small amount of microphony that can be heard when you tap the covers with a plectrum. Customers can also specify how much wax potting they want – if any at all. Although the 4-5 is not exactly a 'vintage-sounding' humbucker, it does produce a PAF-style 'bloom' when you sustain notes and the transient response is touch sensitive and uncompressed.

All things considered, the 4-5 Special mixes several desirable vintage traits with single-coil brightness, humbucker output levels and an almost hi-fi frequency response and clarity. If these are qualities that appeal to you, it's well worth trying a set or investigating House Of Tone's hotter variations on the theme.

LIKE THIS? TRY THESE

The design may be different, but the **Gibson Tony Iommi Signature Pickup £129** has a mix of alnico II and ceramic magnets. Other than that, multi-magnet humbucker options are thin on the ground.

Guitar & Bass VERDICT

+ Very clear and bright
+ No pumped-up midrange
+ Even string-to-string balance
+ Touch dynamic
+ Lively transient response

- Not suitable for vintage tonehounds
- Coil tapping not an option

If a pickup with humbucker output levels, fat lows and single-coil style treble response appeals, look no further

9/10

Xvive Bass Squeezer

GARETH MORGAN finds out if Xvive's new mini bass pedal has the qualities to be his next squeeze...

PRICE £36 **CONTACT** www.jhs.co.uk

Xvive's line of USA-designed, Chinese-made pedals has been growing steadily since first appearing in 2012. Its selection of micro units has reached an impressive 25 in number, including two designed by German guitarist Thomas Blug, and there are also a number of digital pedals, tuners and full-size units. The company's only bass-specific offering so far is the Bass Squeezer, a compression pedal with added drive.

With Xvive, micro really does mean micro, the Squeezer being housed in an aluminium enclosure measuring 42mm wide, 52mm high (with controls) and 93mm deep, and weighing virtually nothing (270g/9.5oz). Controls-wise, it's a simple afair. Aside from the chunky stomp switch, there's a funky white chickenhead compression dial that deals with the amount of the effect you blend into your sound, and an associated tiny black volume control for overall output level. Utilising just volume and leaving the compression dial fully anti-clockwise means the Squeezer can also function as a simple level booster. The two remaining controls deal with the Squeezer's additional overdrive feature, namely a toggle switch to turn it on and off and a small black dial controlling the intensity of the effect. Between the compression control and stomp switch, a blue LED illuminates when the unit is active.

The Squeezer can be powered only via a mains adaptor (which is unsurprisingly not supplied), presumably because there's simply not enough room to, err, squeeze in a battery... but it is true bypass in nature.

In use

The Squeezer's simple roster of controls makes it a pretty straightforward task to set the basic compression effect to your desired taste. To get simple support for your note, match your in and out levels with the volume control and roll the compression dial to about a third (10 o'clock). It induces a modicum of punch and sustain, smoothing out note decay in a similarly subtle manner, yet without sounding especially synthetic.

You can dial in more compression and still retain a clean note; the squashed vibe becomes more pronounced fairly quickly, but the signal from pokier active basses rapidly creates distortion unless you're prepared to cut back on EQ. Overall, it's better with passive basses and used in a subtle manner.

The overdrive effect is practical for bass playing – not especially extreme, but fizzy enough for aggressive playing. You still get a sense of your original note underneath the spiteful overcoat even at boost levels approaching full.

Combining it with compression ups the intensity of the overdriven sound and also forces you further forwards in whatever mix you may find yourself in.

Guitar Rigs VERDICT

A handy, inexpensive compressor with simple overdrive and level-boost functions. It's easy to use and ultra compact

8/10

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Burns Marquee Bass & Shadows Bass 1964

This pair of retro four-strings captures the essence of the 60s. **GARETH MORGAN** gives two Burns basses the third degree

LIKE THIS? TRY THESE...

Burns Marquee Bass

With its extended slimline horns, twin Lipstick single coils and funky Copperburst finish, the instantly recognisable **Danelectro '58 Longhorn Bass £349** is another retro repro belter. Based on an old Dallas Tuxedo model, the **Bass Centre Wyman Bass £595** is undeniably quirky with good, honest tones, and is great fun to play.

LIKE THIS? TRY THESE...

Burns Shadows Bass 1964

Another iconic 60s bass, the **Rickenbacker 4003S £1,950**, has both traditional Ricky tones and more solid groove options, plus it looks the business. The **Italia Imola GP Bass £879** is a semi-hollowbody belter based on Ampeg's short-lived AEB-1, that looks cool and sounds great.

These two retro corkers from Burns – one a faithful reproduction and the other a re-imagining of an early-60s model – are both made in China, with the Shadows Bass an update on an instrument originally commissioned for John Rostill to match a signature guitar produced for Hank Marvin.

The production basses that followed were not exact replicas, Burns choosing to retain the essence of the instrument while losing some of the quirks of Rostill's actual bass – and early-2000s models adhered to this principle. The latest version is much closer to an accurate replica.

Replete with a number of upgrades from its previous incarnation, the Marquee Bass is modelled on the company's Jazz Bass, introduced in 1964. It's as close to a versatile workhorse as you can get from Burns.

Marquee Bass

The materials used in making the Marquee's Baby Blue-finished basswood body are of a higher quality than the original, but the vista is still somewhat like a reversed Burns Jazz Bass, the upper-rear bout being slightly bulbous and the lower sleeker. Player comfort is guaranteed thanks to forearm and ribcage chamfers, and the frontal profile is enhanced by the expansive pearloid scratchplate with frontal wings that penetrate the domain of its offset, pincer-like horns.

Secured by four bolts, the Canadian hard rock maple neck is a welcoming slim C profile, that's comfortable to play and culminates in a Fender-esque headstock with a classic batwing outline on the bottom edge. Four Burns de-luxe machineheads sit in a row with a perspex make/model badge below and, once they've cleared the graphite nut, the strings reach a rosewood fingerboard with pearloid dot markers and 20 well-seated, medium nickel frets. Forwards of the nut is a zero fret, designed to equalise the brighter tonal properties of the open-string and fretted notes. For the bridge, Burns has fitted a solid-looking, chunky chrome deluxe unit with the standard Phillips screwdriver/Allen key adjustability.

Modelled on its Jazz Bass from 1964, the Marquee is as close to a versatile workhorse as you get from Burns

You'd expect the Marquee to be passive and it duly is, bearing three slanted, chrome Burns Tri-Sonic pickups. These are now hand-wired, as is the circuitry, and exude the promise of more tonal bang for your buck. Tonal variation is pushed to the maximum, courtesy of a five-position pickup selector switch. You also get three controls numbering volume, and tone for the neck and middle pickups and bridge Tri-Sonic. If you pull on the bridge tone control, it uncorks two further pickup combinations.

In use

It's worth noting that the bridge tone control works only for combinations involving the bridge pickup (four in

total), neck/middle tone for the remainder; they never work in concert. As for the variations on offer, individual pickup settings range from a softer, earthy thud to a fatter version with more punchy substance and a pleasing, barky snarl, all with clean, zingy definition that's unencumbered by any nastier, honky mid elements. The tone controls offer further, softer-edged variations for those times when you need to step back inside the mix a little, and they're pretty easy to find.

If you're after thuddier tones, where note detail is informed by an adenoidal zing, the neck/middle, bridge/middle and all-three pickups variations dish this out with aplomb. Whilst rolling back tone refocuses proceedings in more solid directions, there's a distinct feeling of unevenness to the sound here. The neck/bridge offering comes closest to an even distribution of tonal elements, with a decent clean growl from the E string and distinct high-end cut and bite, although nasal zing is still too dominant.

Shadows Bass 1964

The latest version of the Shadows Bass is as much a direct copy of John Rostill's original prototype as possible. Two major elements in this are that the Nu-Sonic pickups are now swankily hand-wired and the Canadian hard rock maple neck is narrower, which should be a boon for player comfort in the first-fret area.

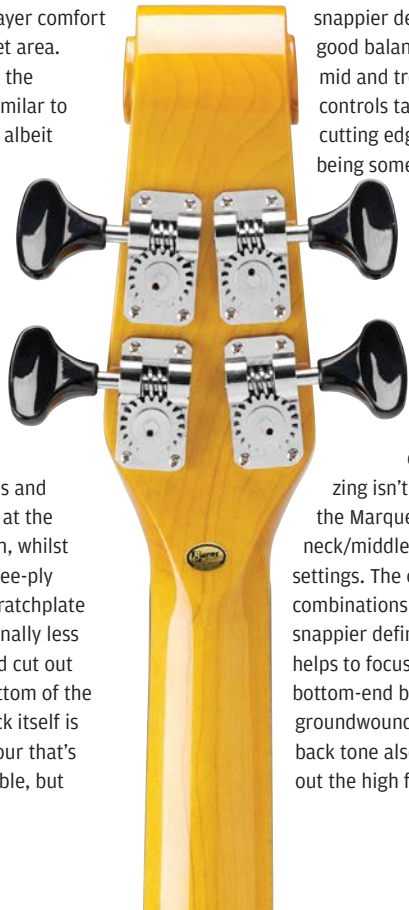
Body-wise, the template is similar to the Marquee, albeit there's American alder under the period-correct Shadows White finish. Subtle variations abound, with the horns and greater mass at the neck insertion, whilst the classy three-ply tortoishell scratchplate is also fractionally less expansive and cut out round the bottom of the neck. The neck itself is a slim C contour that's equally playable, but the narrowing oblong headstock with a chunky scroll at the furthest edge – while historically accurate – is far less appealing. It's decently back-angled for string tension purposes and carries open-gear Van Gent-type tuners with black button machineheads. A graphite nut and zero fret lead to a rosewood fingerboard with pearloid dot markers and 22 small nickel frets.

As well as the chrome 'toast rack' palm rest (which fingerstyle players will need to remove), there's an aluminium, string-thru Burns Rez-o-Tube bridge; its chunky mass and the more direct inclusion of the bass' body in the sound via four aluminium string tubes are both tonal plusses.

Alongside the three Nu-Sonic pickups, the controls are the same as you'll find on the Marquee: two tones and one volume with the five-way selector switch and a pull on the bridge tone control offering seven different pickup combinations.

In use

The Shadows Bass comes with groundwound strings for a silky, retro-correct feel. You get the same number of tonal variants, and the individual pickup offerings shine. The neck pickup is woody with a thuddy acoustic vibe and even response across the neck, the middle is punchy with more solidity and aggression, and the bridge Nu-Sonic has a tight tonality that's funky with snappier definition and a good balance between high-mid and treble. The tone controls take away a little cutting edge, the upshot being some decent meat and potatoes variations.



There's a similar issue with the combined pickup settings. To be fair, the dreaded nasal zing isn't as nasty as with the Marquee and only spoils neck/middle and all-three settings. The other combinations benefit from snappier definition, which helps to focus the more bottom-end biased groundwound vibe, and cutting back tone also helps smooth out the high frequencies.

The Burns Shadows Bass packs three Nu-Sonic pickups

KEY FEATURES

Burns Marquee Bass

- **PRICE** £489 inc hardcase
- **DESCRIPTION** Solidbody bass. Made in China
- **BUILD** Basswood body, bolt-on hard rock maple neck with 20 medium nickel frets (plus zero fret) on a rosewood fingerboard. Burns Deluxe tuners and bridge, chrome hardware
- **ELECTRICS** Passive with 3x chrome Burns Tri-Sonic pickups
- **CONTROLS** Five-way pickup selector switch, master volume, neck/middle pickup tone and bridge pickup tone controls (pull bridge tone for two further pickup combinations)
- **LEFT-HANDERS** No
- **FINISHES** Shadows White, Baby Blue, Red Burst
- **SCALE LENGTH** 818mm/32"
- **NECK WIDTH** 40mm at nut, 55mm at 12th fret
- **NECK DEPTH** 20mm at first fret, 24mm at 12th fret
- **STRING SPACING** 10mm at nut, 18mm at bridge
- **WEIGHT** 4.5kg/9.92lbs
- **CONTACT** Burns Guitars 020 8783 3638 **www.burnsguitars.com**

Guitar & Bass VERDICT

+ Accurate retro reproduction with all the features you'd expect
+ Plenty of tonal variation
+ Stands out in a crowd
+ Reasonably priced

- Lacks a little bottom end
- Some variations are a little nasal and zingy

A good, solid budget rendition of one of Burns' classic 1960s models, with more tonal variation than you'd expect to find

8/10

KEY FEATURES

Burns Shadows Bass 1964

- **PRICE** £1,245 inc hardcase
- **DESCRIPTION** solidbody bass. Made in China
- **BUILD** American alder body with polyester finish, Canadian hard rock maple neck with 22 small nickel frets on an Indian rosewood fingerboard. Chrome 'toast rack' palm rest, Van Gent-type black button machineheads and aluminium Burns Rez-o-Tube string-thru bridge. Chrome hardware
- **ELECTRICS** Passive with 3x Burns Nu-Sonic pickups
- **CONTROLS** Volume, neck/middle tone and bridge tone controls, 5-way pickup selector toggle (pull bridge tone for two further pickup combinations)
- **LEFT-HANDERS** No
- **FINISHES** Shadows White, Green Burst
- **SCALE LENGTH** 856mm/33.5"
- **NECK WIDTH** 43mm at nut, 53mm at 12th fret
- **NECK DEPTH** 21mm at first fret, 25mm at 12th fret
- **STRING SPACING** 11.5mm at nut, 17mm at bridge
- **WEIGHT** 4.48kg/9.88lbs

Guitar & Bass VERDICT

+ John Rostill's original, reproduced with upgraded build quality
+ Good tonal variations with plenty of thud
+ A very cool option for the right gig

- Excessively zingy high-mids render some combined pickup settings less enjoyable
- Scroll headstock not to all tastes

A retro stonker, where adhering to the principle of careful reproduction has paid dividends in looks and sounds

9/10

GUITAR MOT THE ROAD TO REDEMPTION

Take three untouched guitars and three experienced luthiers, stick them in a room together and see what happens. That was the plan hatched by *G&B* to redress decades of guitar neglect

Story and photography **Mark Alexander**

Agreeing to have each of your guitars dissected by a team of seasoned luthiers could be viewed as a kind of sadistic pleasure. For me, it was like taking my loved ones to a hospital, placing them on an operating table and watching skilled surgeons work on them. The idea made me uncomfortable and slightly nauseous.

You see, my clutch of guitars has been kept carefully out of reach of trained technicians ever since they were first acquired. Each one has been loved and cherished, but the sum total of their care over the last 30 years amounts to an occasional change of strings and a light dusting. Maybe it was a pang of guilt, but I thought it would be interesting to see what could be achieved if these neglected instruments were placed into the caring hands of three men with the power to revive unloved musical instruments.

We arranged for the whole thing to happen on the same day, in the same workshop, meaning it would be a relatively quick and painless process...

First on the bench is my Fender Stratocaster Plus, which I purchased proudly 29 years ago. A distinctive first-generation example with an ivory finish and rosewood fingerboard, the Strat Plus was introduced in 1987 as an upgrade to the American Standard Stratocaster, boasting the same Lace Sensor pickups used by Eric Clapton and Jeff Beck, no less. I took mine to university, on to my first job in London and into my first home. It was present when I proposed to my now wife and it sat next to me when I cradled my first-born. It has been everywhere with me, other than to see a guitar tech.

"First impressions are there are a few problems with the string heights," explains Ian Dickenson, who heads up The Guitar Workshop in Glasgow. "There is some crunching in the selector switch, which is causing some cut-out and lots of crackling. Tone pot #2 is pretty stiff and sticky. The pickup heights all need adjusting, and there's some general wear and tear. The frets are also flattening out around 12-14 – the happy place on a Strat. Nothing too major." As initial assessments go, I'd expected worse.

Next to go under the knife is my Faith Venus (natural), which was purchased a couple of years after the formation of Faith in 2002. The Patrick James Eggle design was the first model to be released by the company and has remained its most popular model to date. Mine has seen some changes; most notably the replacement bridge pins and some accidental damage inflicted on a tuning peg during a clumsy thrash. It turns out these are the least of my worries...

"It's in good condition," says Rory Dowling of Taran Guitars encouragingly. "It's got African mahogany back and sides, the soundboard is a solid European spruce top. It's not bad. Fret wear is not massive, but it definitely needs attention because we have a lump at the bottom of the neck, which >

Ian Dickenson giving the Strat's fingerboard some much needed TLC

No pot was left unturned by our luthiers

The Faith being prepared for its MOT

Rory gets down to work

The Faith's bridge before work commenced

is standard for all instruments that haven't been set up. It means when you're playing higher up the neck, it can rattle – and that's an issue."

For an opening gambit, I'm not too perturbed. However, he goes on to explain that the action needs to come down by 0.3mm on the bass side and about 0.7mm on the treble to make the guitar "playable". And then there's the saddle and the nut. Dowling explains that replacing these plastic components with bone would crispen up the sound and encourage a better transition of sound from the strings to the soundboard.

"And there's a gap behind the saddle," he continues. "There are two things happening here. The intonation is being pulled forward, so it's playing sharp because the strings are shorter than they should be relative to the frets. Also, by putting in a new saddle that is perfectly upright and fits the slot snuggly, you'll have a better transmission of sound and it will stay in tune better. So that's a really important area to change. The nut is doing pretty much the same thing."

Dowling's initial palatable assessment is now giving cause for concern. Although it looks good to me, my Faith clearly needs some attention to bring out the potential of the instrument. Concerned by Dowling's appraisal, I make my way gingerly to Pete Beer's workbench.

Beer has been plying his trade as a luthier for 15 years. Under his watchful eye is my Joan Cashimira 130-c – a cutaway classical guitar purchased from the luthier's factory in Spain 20 years earlier. It travelled home with me in a cardboard box, surviving Alicante airport during the height of Spain's expatriate heyday. It now holds pride of place in my

IAN DICKENSON

Ian studied guitar making under master luthiers William Kelday, Paul Hyland and Michael Ritchie at Anniesland College in Glasgow between 2005 and 2007. He followed that up by repairing and restoring instruments for various shops, studios and private customers while working as head technician for Freshman Guitars. During this seven-year stint, he set up around 40,000 guitars. Since then, he has created The Guitar Workshop in Glasgow, the founding principle of which is to be an open workshop that is visible on the high street, and encourages customers and guitar enthusiasts to see and experience instruments being made and repaired by hand.
www.guitarworkshopglasgow.com

RORY DOWLING

Rory commits to building 12 guitars every year. It's a commitment that has earned him a 14-month waiting list. His company, Taran Guitars, was set up following a fateful sortie into furniture design, which resulted in a first-class BA (Hons) degree 13 years ago. He didn't take to making furniture, but enjoyed building guitars, and four years ago he relocated from Edinburgh to a converted milking shed in Fife. Since then, his business has gone from strength to strength, with the likes of Martin Simpson, Matheu Watson and Kenny Anderson (aka King Creosote) calling on his services and prompting a five-fold expansion of his workshop.
www.taranguitars.co.uk

PETE BEER

Pete, like Ian Dickenson, began his lutherie career in 2001 at Anniesland College in Glasgow, before moving to London Metropolitan University to study musical instrument technology. He established himself in south west England before returning to his native Scotland in 2014, marking the move by designing and building his ideal workshop with a view over the lower Clyde. His idea was to build guitars that met the exacting demands of contemporary classical performers and specialise in repair work on classical guitars.
www.petebeerguitars.com

The Strat receives the most obvious and intrusive surgery. With the scratchplate removed and the neck separated, my guitar lies in pieces

living room as a bona fide survivor and my 'special' investment. "It's a bit thick on the varnish around the edge, but I think it's a solid top," says Beer. "On the nut and the treble strings, the action is a bit high, even for standard classical technique. The fingerboard could do with cleaning up, which I would do anyway. There are no obvious structural problems and the neck angle is okay."

Although a fairly blunt appraisal, it does at least represent a relatively clean bill of health for my beloved guitar, or so it appears.

Nitty gritty

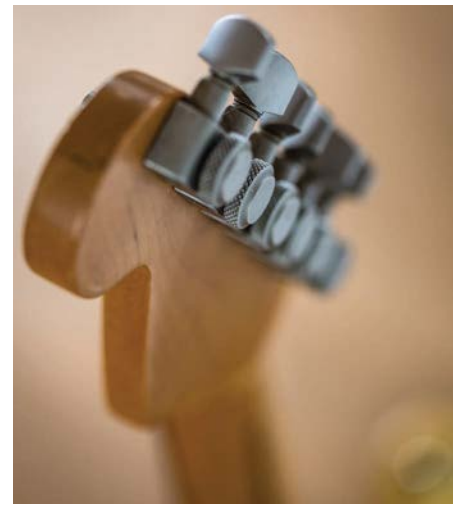
With the initial appraisals over, it's time to sharpen the chisels, select the sand paper and cut the strings. Each guitar will be given the once-over by its appointed luthier, each of whom has donned a workmanlike apron and a stern game face. The niceties are over; it's about to get serious.

The Strat receives the most obvious, and certainly intrusive, surgery. With the scratchplate removed and the neck separated from the body, my guitar lies in pieces on Dickenson's workbench. Despite the carnage, his main objective is to ensure the internal electrics work as they should after evading any proper care and attention for nearly three decades.

To my relief, it seems they've endured remarkably well. "I've sprayed out all the switches, pots and connections," he says, "and everything seems to be working fine."

My semi-acoustic Faith lies on Dowling's table similarly exposed by his detailed examination. "We've taken off all the strings," he explains, "and the saddle and the nut, and we've given it a fret dress. We levelled all the frets and got rid of the hump and shallow area in the neck. I adjusted the truss rod because there was too much relief in it – I try not to adjust the truss rod if I don't have to, but in this case I had to."

As unnerving as the process is, I'm becoming accustomed to seeing my guitars >



The Strat gets a spring clean

The Joan Cashimira cutaway pre-makeover

Pete Beer gets started on the fretboard

Beer fitting a replacement saddle

In this universe of minute trigonometry, where millimetres matter, the difference between any guitar and a tuneful, stable instrument is in the detail

in varying degrees of undress. The initial assessments weren't too damning and nothing has been said to cause real concern. However, all that is about to change...

"The saddle slot is forward on the instrument from where it should be by 3mm," explains Dowling in a chilling tone. "It's a common thing on factory-built instruments. That would make it play sharp – the strings are too short relative to the scale length. Also, the closer the bridge is to the x-brace, the less the top can move and the less volume you'll get from your instrument." "You mentioned that it was quite quiet," he tells me. "That could be because the bridge is glued too far forward. That distance is critical."

If we had more time, the solution to this juddering reality check would be to remove the bridge and replace it 3mm from where it's currently located. Instead, we opt to squeeze the saddle into its original slot as close as possible to its optimum position. "We can get it to fit," says Dowling, "but it's not ideal."

This thunderous hammer blow makes it apparent that the technicians working on my guitars have an entirely different view of the world than I do. In this universe of minute trigonometry, where millimetres matter and angles count, the difference between any guitar and a responsive, tuneful and stable musical instrument is all in the detail.

"The original saddle was quite loose, which meant when it was under tension it leant forward, which meant it was only touching the guitar at the top edge of the slot and the front corner of the saddle," explains Beer as he delves deeper into the setup of my classical six-string. "If you get a nice, snug fit, the saddle will touch both sides and the bottom of the slot, making a much better contact with the guitar, which can make a fare bit of difference to the sound."

My Joan Cashimira cutaway not only has action issues, the tonality of the instrument is being undermined by an ill-fitting saddle. These barely detectable discrepancies and resulting minuscule adjustments are real eye-openers. These are not issues I've been able to detect with my limited knowledge and uncultured ear, but they all seem to make sense. I've noticed a fall-off in sound and there's a disconnect in the tonal range. Suddenly it all rings true...

The results

With the day drawing to a close, the air is thick with dust and the sound of strings being tuned. The smell of lemon polish lies over the workbenches like an early-morning hue and, through it all, I can make out my three guitars each with a new glow. If they had eyes, they would be glinting. If they could walk, there would be a distinct spring in their step.

Ostensibly, my guitars are unchanged. They're still sporting the same chips and marks that made them mine, but something is different. The Strat has perhaps seen the closest scrutiny and the most obvious change resulting from a spur-of-the-moment decision to hard-tail the bridge. But the neck is also >

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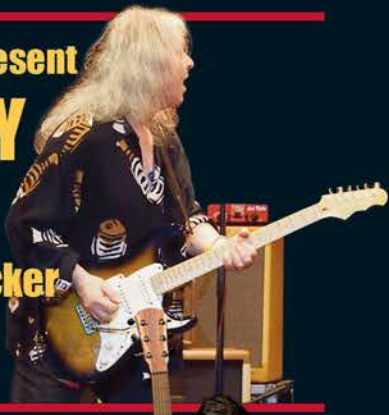

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BEFORE AND AFTER

1996 Fender Stratocaster Plus

BEFORE
- Pickups loose
- Pickup selector crackly
- Dead frets

AFTER
+ Neck looks and feels like new
+ Zero noise when changing pickups
+ Hardtail bridge

2004 Faith Venus (natural)

BEFORE
- Lacklustre tone
- Buzzing on various frets
- Occasional tuning issues

AFTER
+ Easier to play
+ Confident, uniform sound
+ Increased tuning stability

1996 Joan Cashimira cutaway

BEFORE
- High action
- Temperamental tuning
- Dubious intonation

AFTER
+ Improved feel
+ Easier to play

smooth and the pickups secure, with their heights now properly adjusted. Yes, the pickup selector has been cleaned and the tone pots no longer crackle, but the guitar itself feels improved. Almost new.

"Everything went smoothly. It was a complete and full MOT," says Dickenson. "There's colour in the neck and a nice bit of hard wood behind the bridge. You can go from pickup to pickup without it cutting out and the fretwork has been brought back to factory spec. They flatten out over time – it's basically metal grinding against metal, so it's a whole new lease of life."

I can make out my three guitars with a new glow. If they had eyes, they would be glinting. If they could walk, there would be a spring in their step

My Faith Venus has certainly been through the mill. Changes to the saddle and nut, as well as the action, have pushed it closer to the guitar I've always wanted it to be. "We've given it a fret dress, a new nut and saddle, and pulled the saddle back as far as we could. We've tightened the tuners and adjusted the intonation so it plays in tune everywhere," explains Dowling. "The biggest surprise was the bridge being in the wrong place, but everything else was fine."

The gleaming frets and cleansed fretboard may have caught my eye, but my Faith plays easier, delivers crisper tones and has a more complete sound, perhaps resulting from the improvements made to the tuning. The once-stifled sound seems brighter and more ample. Those little nagging doubts that had been building are gone.

Finally, my Joan Cashimira cutaway has probably seen the least use over the years, but still commands a special place in my collection because of the tone it produces. Saying that, I've always found it tricky to play, assuming it's all part of the classical vibe. Beer puts me straight on a few things.

"The main thing is, I've put in a new nut and saddle. The new saddle is tighter-fitting. The old one was pretty loose and was leaning forward, and I've made it quite a bit lower because the action before was high. There was quite a bit of uneven finish underneath the old nut, so I've taken that away and the new nut is tighter-fitting and a lot lower," he explains. "I've also cleaned up the fingerboard because it was quite grubby."

It all sounds so every-day. The reality is that the guitar feels new, and plays like an entirely different instrument. All over the fingerboard, it feels as if the strings are there to be played, rather than hammered down into place. And the sound seems brighter and more articulate.

The guitars I've lived with and grown accustomed to have taken some time out. They have been whisked off to a musical instrument's equivalent of a spa resort and indulged in relaxing treatments and therapeutic remedies. Inside and out, they've been cleansed, and are now looking and playing like new. In what had been a long-overdue bout of TLC, my guitars have been given a new and rejuvenating lease of life – much to my relief.

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TONY BACON

Tony Bacon is an author and journalist who writes about musical instruments, musicians, and music. His books include *The Ultimate Guitar Book*, *The Telecaster Guitar Book*, and *History Of The American Guitar*, and his latest is *The Gibson 335 Guitar Book* (Backbeat), which tells the story of those great Gibson semi-solids.

A CERTAIN VINTAGE

Vintage guitars hold a special allure for many players, but does 'old' always mean 'better'? **TONY BACON** gets nostalgic...

What do you call something that's old? Okay, clever clogs, you call it "old". But what if you want to call it something that makes it sound a little better? I mean, think about that word "old". It sounds... old, doesn't it? You know: crusty, ancient, manky, antiquated. If you're in the business of selling collectable old stuff – cars, paintings, jewellery, guitars, whatever – then you need a different kind of word, something to brighten it all up a bit.

Vintage! That's the one we see all the time. When I was researching one of my books, I tried to find out when that word was first applied to guitars. "Old" does have quite a few positive associations, and it's been used for all kinds of things. Think of vintage wine. The rare stuff sipped by sophisticated souls who like to be seen to pay over the odds for the finer things in life. Vintage cars are defined rather precisely as those made between 1919 and 1930. And then there's vintage jeans – who'd have thought it? Apple takes a very recent view of the term when it applies it to iPhones and its other gadgetry: the firm defines vintage products as those it has not manufactured for more than five but fewer than seven years. Anyway... there I was looking for the first printed example of the word vintage used in the company of guitars. The earliest I turned up was in a small ad from a firm called Guitar Resurrection in Berkeley, California, published in December 1973.

That date, 1973, certainly ties in with the start of the idea that old guitars might be more than just... old. Once upon a time, they were simply called second-hand, or just plain used – or, perish the thought, old. Around the late 60s and early 70s, they were turning into vintage pieces. We all know that salesmen can make anything sound better if they use the right jargon. Architectural salvage: doesn't that seem a little more inviting than "junk from a demolition site"? Reclamation collectables: much nicer than "dead people's stuff". Mid-century retro: vastly cooler than "60-year-old rubbish".

I was talking to Don Felder about all this, and specifically why old blokes (including ones who were in the Eagles) are attracted to old guitars. "Everybody looks back and has a great deal of melancholy about things that were old, whether it was old cars, old clothing, old instruments or old films," he said. "There's a great deal of melancholy in people's minds about history. It brings back a lot of associations with their youth, especially baby boomers who look back and want to have a Buddy Holly guitar, a Clapton guitar he played during Cream, or whatever – something from their youth that revitalises their spirit and makes them feel young again."

"Old" does have positive associations, and it's been used for all kinds of things

Of course, old can be good. You can't beat an old friend. And at a certain time in your life older brothers or sisters can be a great source of unimagined riches. So many of the guitarists I've interviewed have talked fondly about the early inspiration of their older siblings. Steve Vai, for example. "When I was a kid, my biggest inspiration was Jimmy Page," he told me. "My sister was listening to Jimmy Page. You can imagine; this little Italian kid from Long Island, and his parents are listening to polka music, *West Side Story*, all this stuff... and I ended up loving all that stuff, too, because it was the only music I was hearing. But my sister got a little radio and started buying all these top 40 records. I'm this little kid, seven, eight, nine, and my brother came home with Sly & The Family Stone – and, finally, my sister was listening to Led Zeppelin. That blew the roof off for me." Led Zep? Old and (mostly) good.

NEXT PHASE.

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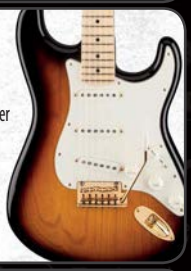

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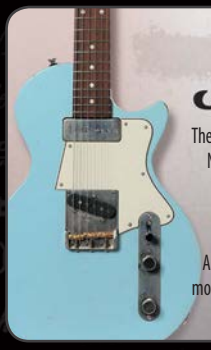

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1967 AMPEG SCROLL BASS

This striking Ampeg bass is one of around 1,150 ever made. Still in player-grade condition, it's a rare treat...

This beautiful and rare Ampeg AEB-1 Scroll Bass is one of about 15 ever listed on Reverb, and one of around 1,150 ever produced.

Ampeg was established in 1946, with a quest to produce a new pickup to be fitted to the end of an upright bass. In 1960, it made history as the first company to incorporate reverb into an amplifier (preceding the Fender Vibroverb). As its success grew, Ampeg ventured into the 'horizontal' bass market with the AEB-1 and its fretless sister model, the AUB-1. The production run was short-lived, lasting only from 1966 to 1968.

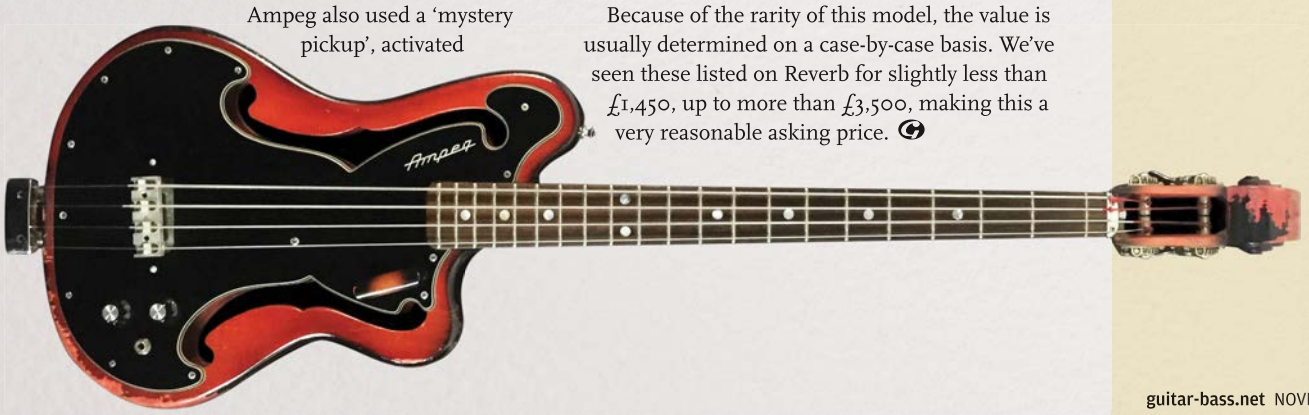
A marriage of electric bass portability and upright aesthetics, the AEB-1 was one of the most eye-catching bass designs ever produced. The scroll headstock and meaty neck were popular with upright players, while through-body f-holes and a sprawling pickguard gave it a modern appearance.

Ampeg also used a 'mystery pickup', activated by the vibration of the strings themselves, allowing for gut strings that produced a more traditional tone. To achieve the necessary angle over this pickup, a tailpiece was fitted to the back end of the body, adding an extra three inches to the string length. This feature also allowed the strings to stretch more, making it possible to pluck the Ampeg harder, in the style of an upright.

Eventually, the mystery pickup was switched out for a more traditional design midway through production, simplifying the setup while reducing the Ampeg's unique character.

This particular specimen is in player-grade condition, but with a piece this rare it's still highly collectible. The red-to-black sunburst finish was one of the more common iterations, though cream-coloured versions and other custom finishes occasionally pop up.

Because of the rarity of this model, the value is usually determined on a case-by-case basis. We've seen these listed on Reverb for slightly less than £1,450, up to more than £3,500, making this a very reasonable asking price.



VITAL STATISTICS

1967 Ampeg AEB-1 Scroll Bass

- **PRICE** £2,100
- **YEAR** 1967
- **TYPE** Four-string bass
- **BUILD** Maple body and neck in Red/Black Sunburst
- **REVERB SELLER** Reverb.com/shop/the-bass-gallery
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Vintage BENCH TEST

1956 GIBSON ES-350T

Mystery surrounds the exact identity of this beautiful Gibson archtop, which shares elements of both the ES-350T and Byrdland. **HUW PRICE** investigates...

The starting point for this Vintage Bench Test is a bit of a first because nobody, including myself, is entirely certain what this guitar is. My first impression is that it started life as a 1956 Gibson ES-350T that somehow ended up with a Byrdland fingerboard and tailpiece. So how can we be certain that it's one thing and not another?

The weight of evidence supports the ES-350T theory, so let's start with the orange label under the bass-side f-hole. It appears original and 'ES-350' is handwritten in the Style column. Beneath that, there's a 'GUITAR' stamp followed by a stylised 'T' for Thinline and a serial number that corresponds with a manufacturing date of 1956. The FON has a '56 letter, too. A 2.25-inch deep body became standard in 1956 when production of the full-depth ES-350 ceased. Both the ES-350T and Byrdland models had the rounded Venetian cutaway in 1956, but the Byrdland looked much fancier. Like the ES-350T, it had three-ply binding on the back, but the front binding was seven-ply. This guitar has three-ply front and back. ES-350Ts were also fitted with pickguards that were black celluloid rather than tortoiseshell. So everything about this body corresponds to a regular ES-350T, except the top. The ES-350T had a laminated maple top rather than the Byrdland's >

Everything about this body corresponds to a regular ES-350T, except the top

The low frets were a feature on mid-50s Gibson jazz guitars, so these probably aren't as worn as they might appear

KEY FEATURES

'56 Gibson ES-350T

- **PRICE** £4,000
- **DESCRIPTION** Archtop electric guitar, made in the USA
- **BUILD** Laminated spruce top, laminated maple back and sides, set maple neck with centre strip, 22-fret ebony fingerboard, rosewood bridge base
- **HARDWARE** Kluson Deluxe tuners, 60s Tune-o-matic bridge, Byrdland tailpiece
- **ELECTRONICS** 2x P-90 pickups, three-way selector switch, individual volume and tone controls
- **SCALE LENGTH** 597mm/23.5"
- **NECK WIDTH** 41mm at nut, 47.5mm at 12th fret
- **NECK DEPTH** 20mm at first fret, 23.5mm at ninth fret
- **STRING SPACING** 34.5mm at nut, 46mm at bridge
- **WEIGHT** 2.7kg/5.9lbs
- **FINISH** Tobacco Sunburst
- **CONTACT** Cranes Music 029 2039 8215 **www.cranes.co.uk**

Above **The multiple binding and 'widow's peak' indicate that this is a Byrdland fingerboard, and it's most likely a later addition**

carved solid spruce, and although this ES-350T is a rare example with a spruce top, it is actually laminated rather than solid.

The main point of contention is the neck. Both models had the short 23.5-inch scale length, but the fingerboards looked very different. The ES-350T's rosewood board had single-ply binding with split parallelogram markers, but the Byrdland's ebony 'board had block markers and five-ply binding with a 'widow's peak' decoration at the pickup end. The binding differences were the same around the headstock, and the ES-350T had a crown inlay rather than the jazzier flowerpot inlay of the Byrdland.

Byrdlands had fancy Sealfast tuners, ES-350Ts had Klusons. This guitar has the latter

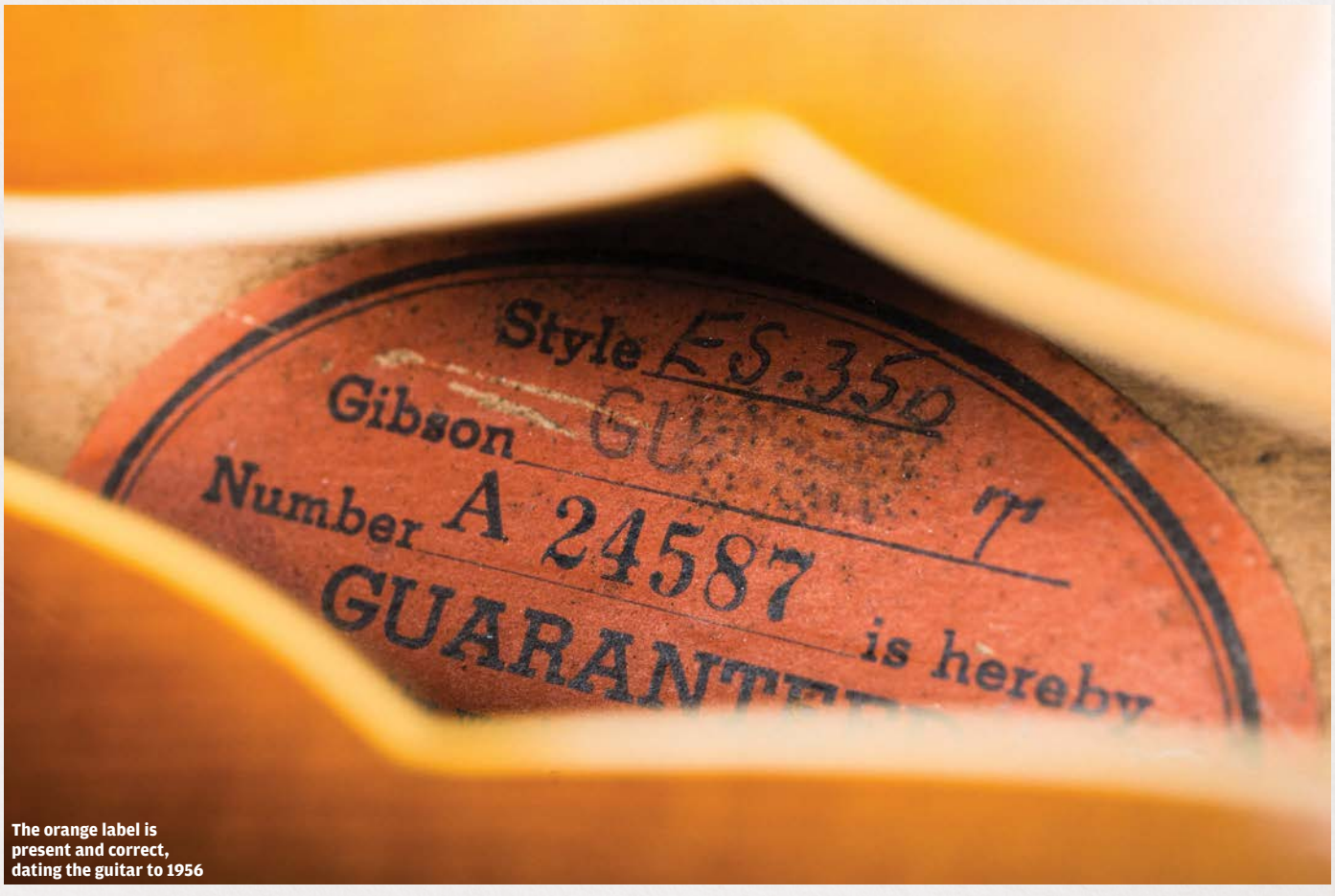
So this is almost certainly an ES-350T neck with a Byrdland fingerboard. The neck shows no signs of having been removed from the body, but there is finish chipping all along the join line between the fingerboard binding and neck, and those areas are the only parts on this guitar that don't black light. The body and headstock binding also look much yellower than the fingerboard binding – even in areas where the lacquer hasn't worn away. My best guess is the fingerboard was retrofitted, either as a cosmetic 'upgrade' or to replace a worn-out or damaged original 'board.

A competent luthier could have done this quite easily without even removing the neck, and this Byrdland tailpiece may have been added at the same time. There are no added holes to accommodate it, but one of the tailpiece screws entered the body at a fairly jaunty angle, which suggests some degree of 'force fitting'.

You could probably cover the cost of a replacement ES-350T tailpiece by selling this old Byrdland unit. Then again, Fretted Americana is selling a natural finish spruce-topped '56 ES-350T for $19,500, and that appears to be fitted with a Byrdland tailpiece too. So maybe it's original after all.

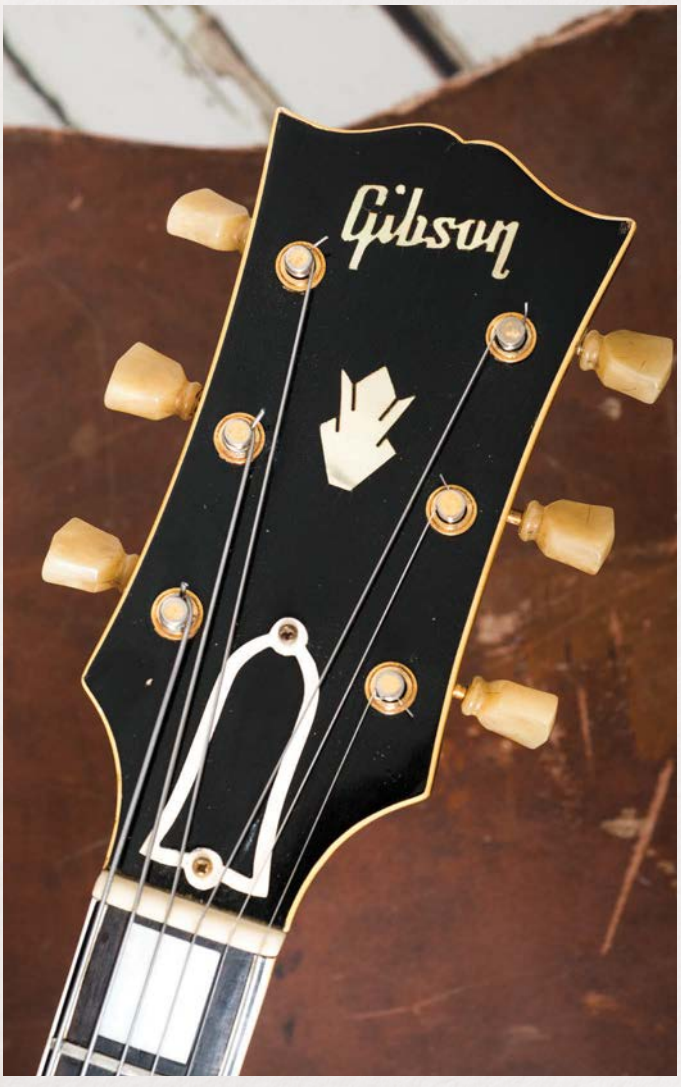
Byrdlands had fancy Sealfast tuners, but ES-350Ts had Klusons. This guitar has the latter and, what's more, they carry the single-line and Patent Applied number stamps, which places them in a late '56 to late '58 timeframe. They also have the single-ring tulip buttons, and they're the only style of tuners that have ever been fitted to this neck.

Although the Tune-o-matic bridge appears to be mounted on a nice Brazilian rosewood base, >



The orange label is present and correct, dating the guitar to 1956

The retaining wire and casting marks on the base indicate this bridge is much younger than the guitar. Look closely and you can see traces of gold plating on the pickup screws. The P-90s appear to be the real deal and they're originals, too



Above left **As you would expect on an ES-350T, the bound headstock has a 'crown' inlay**
Above right **The single line markings and the 'Patent Applied' stamps indicate these Kluson tuners were made pre-1957**

it's fitted with a retainer wire, and on the underside there's a Gibson patent number stamp and a foundry mark. So it's an ABR-1 in shape and size, but was probably made some time between 1966 and the early 1970s.

I lifted the covers from one of the pickups and it became clear that P-90s are the only pickups that have ever been on this guitar. These ones look very old, but there are slight traces of gold plating left on some of the screws. The rubber switch grommet probably isn't original because research suggests they began appearing around 1960 on the humbucker models. The switch tip looks like a replacement, too. The white plastic strap buttons have been replaced, with a Gretsch button added to the upper bout.

Overall, the ES-350T is in decent but well-used condition. Besides the dings and dents, and a fair bit of lacquer checking, there is one long and highly visible side crack that runs from just past the pickguard bracket and stops just short of the jack socket.

The original case comes with the guitar, but it's looking fairly sorry for itself. It's probably repairable, but you could buy a 50s replacement, and at the time of writing there was a four-latch 'Cali Girl' 350T/Byrdland case on Reverb for £380.

In use

The guitar arrived with flatwound strings but, much as I have tried, I just can't get along with them. Some players sound great with flatwounds, but I'm no jazz guy and I find myself getting bored with the tone and feel after a short time. When I see an ES-350T, I'm inclined to think of Danny Gatton, so I wasted no time in putting on a set of pure nickel 11-gauge roundwounds and tweaking the bridge height and truss rod.

Once the body started resonating, the ES-350T's archtop pedigree came to the fore

I don't think my attitude to any guitar has ever moved from indifferent to besotted quite so quickly. Those flatwounds just didn't drive the top properly. However, once the body started resonating, the ES-350T's archtop pedigree came to the fore. It's loud, smooth, mellow, dynamic, deep and surprisingly powerful. Then again, although it's a thinline, it measures 17 inches across, so there's a lot of space inside the box. When I was finally able to stop playing long enough to plug in, the ES-350T

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Above **The rubber grommet and switch tip are later additions, but the switch itself appears original**

just kept on giving. Single notes have extremely articulate definition and there's way more substance and complexity to the tone when compared to an ES-330. There's more sustain, too, but the ES-350T is quicker to feed back.

Each pickup has its distinct tone, but the big surprise was an out-of-phase centre setting. Instant T-Bone Walker fun ensued and I love the tone so much that I wouldn't change a thing. It's likely someone just flipped one of the P-90's magnets, so it would be an easy fix for someone who felt differently.

As well as old-school jazz tones, the ES-350T proved to be a consumate blues and R&B instrument

As well as the old-school jazz tones, the ES-350T proved to be a consummate blues and R&B instrument, so it's no wonder Chuck Berry used one to cut some of his greatest tracks. It's so expressive and responsive to playing touch it's a constant source of intrigue and inspiration. Add a touch of overdrive and fuzz, and you can even play fusion, but you'll have to watch that feedback.

Besides the fingerboard, bridge and tailpiece swaps, and of course that side crack, there is something more fundamental that may limit this guitar's appeal. The neck has depth, but the short scale combines with a very narrow fingerboard and string spacing and frets that are ultra-low, wide and flat. Jazz guitars of this era often had very low frets because string bending wasn't 'a thing', and Gibson even called the Les Paul Custom a 'fretless wonder'.

So, although these frets appear heavily worn, in reality they may not be substantially different from new. Given the changes already made, a refret would do no harm to the saleability or playability from a non-jazzer's perspective. The guitar actually plays pretty well with the current frets and the short scale feels effortless.

My only complaint would be that the narrow string spacing makes fingerpicking a bit tricky, which is a shame because the sound lends itself perfectly to that playing style. However, if you want to play chord melodies without the painful stretches, blues and jazz solos or rocking rhythms, like me you may find this ES-350T a revelation.

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Opposite page, main picture **Julian with a selection of his amps**
Top right **Dallas Rangemaster Popular 528 combo**
Above right **Controls on Selmer TV15**
Middle row, left to right **Gibson GA-79RV & Maestro M212RVT; detail of Gibson GA-79RV; Dallas Shaftesbury 30**
Bottom left **Control panel on Dallas Shaftesbury 30**
Bottom right **Hohner Concertophon IV (left); Dallas Rangemaster Popular 528 combo**

Vintage PRIVATE COLLECTION

MARSH: ALL AMPS

Amp collector Julian Marsh has amassed a fine array of largely British-built vintage beauties from the 1950s and 1960s. **LARS MULLEN** gets a personal tour

"I've always been fascinated by some of the quirky designs of early guitar amplifiers from the 50s and 60s, especially British designs," says Nottinghamshire collector Julian Marsh. "Most are, of course, what we now class as retro, but at the time were alternative-looking models that strived to gain popularity with cosmetics as well as sound.

"As a gigging guitarist, though, I lean heavily towards vintage Fender valve amps for live work. That includes my blackface Deluxe Reverb from 1964. It's such a classic combo, the last model before CBS took Fender over in '65.

"It's since been modified by the late famous amp tech César Díaz, who worked with Stevie Ray Vaughan, Eric Clapton and Keith Richards. He replaced the output transformer with one from a 1962 Tremolux and changed the speaker to a 75-watt Celestion. The result is a much louder and giggable amp, but with the same classic Deluxe Reverb sound. His name is signed next to his mod on the chassis.

"Most of my amps remain with their original spec, like my gorgeous brownface Fender Deluxe, which is almost mint. It's remarkable, as it's 56 years old and the first of the new 60s Fender combos in brown tolex rather than tweed, complete with the same blue 12-inch Jensen rather than the Oxford speakers that came a little later.

"I prefer not to change any spec, and spend a lot of time ensuring my amps remain in original condition"

"I prefer not to change any spec if possible, and spend a lot of time ensuring that my amps remain in original condition with the correct speakers, controls and handles. There are some great websites dedicated to vintage gear that are very helpful to fill in any knowledge >

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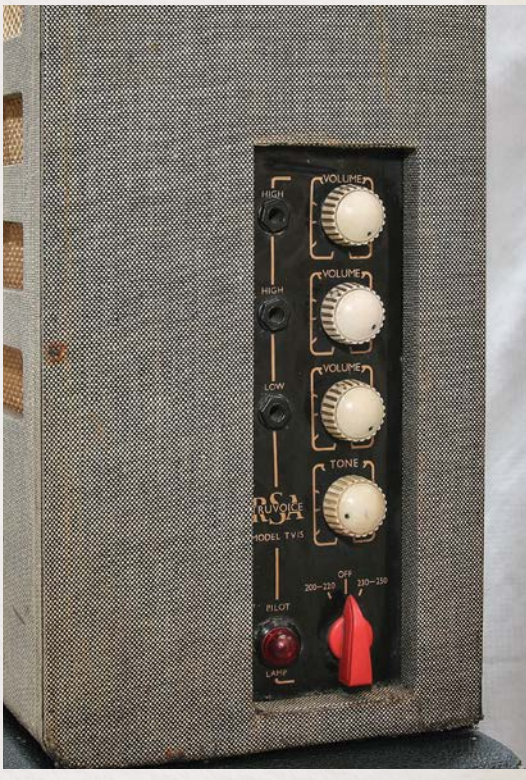
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gaps, including Steve Russell's Vintage Höfner site. Every time I buy an amp from the classic years, I send him a photo so this body of knowledge can continue to grow and be shared. With the help of friends, my amps are circulating at the Soundgas shop nestled in the Derbyshire hills. It's ideal as well, as the lockup where I keep them seems to be getting smaller and smaller... for some reason," Marsh laughs.

"I also spend a lot of time in recording studios, and while I have a lot of amps to cherry pick from, time after time I fall back to my trusty Gibson GA-79RV Stereo from '59. It has a loud 40-watt mono output or switchable 20+20 stereo via a pair of Jensen P10Q 10-inch speakers.

"Gibson produced that combo between 1959 and 1963 specifically for its range of Varitone guitars, including the ES-345 and ES-355. The original tweed finish on my model is still in great shape, the later ones came in a grey brown tolex. It is a beautiful-sounding amp."

"While I have a lot of amps to cherry pick from, time after time I fall back to my Gibson GA-79RV Stereo"

Next, we return from across the Atlantic as Marsh shows off some British treasures from the 1950s and 60s.

"I'm also particularly interested in the Dallas Arbiter range of guitar combos," he says. "I've got a very early-60s Dallas Shaftesbury 30 with a curved cabinet that's totally original with Brimar valves and EMI elliptical speakers. It's a fine example of the company's funky top-of-the-range, pre-Dallas Arbiter or Sound City, 30-watt combo, and it really does sound great. I've also got a rare Dallas Rangemaster Popular 528 combo dating from the late 50s and in exceptional condition, complete with original Goodmans elliptical speakers."

Many dark winter nights for Marsh are spent surrounded by cosy glowing valves as he researches guitar amp history.

"I find it fascinating to follow the trail of a British amp company and how they evolved along the way," he says. "Selmer, for example, that whilst original in

Above **A stack of Selmer heads**
Top right **1961 Selmer Diplomat Reverb**
Above right **1962 Futurama Caravelle**

its own right, was also picking up some ideas from the USA, with the early Truvoice tweed-covered amps.

"I also have an incredibly rare Selmer TV15 from the same period, in mint condition, and what was known as its answer at the time to a tweed Fender Deluxe. It looks great, with striped tweed covering, and there are very few of these in existence.

"I believe the rarest of all Selmer guitar combos is the '61 Diplomat Reverb, the company's first amp to feature a reverb unit. The 15-watt Diplomat, loaded with a black label Goodmans Alnico 12-inch, also featured tremolo and was only produced during '62. The one I've got is a very nice clean sample and was previously owned by Iron Maiden.

"I'm also a fan of Selmer standalone heads. The 50 Mk III Reverb, as its name suggests, is a rare version from the Treble & Bass Series. This is the amp that sounds like a Marshall Plexi, as does the copper-panelled Mk III 50 head.

"Selmer also produced a budget range under the Futurama label in the early 60s. These were valve driven and still sound pretty good, and now of course are highly collectable. I have a 15-watt first series Futurama Caravelle from '62 and a second series Caravelle from '64 with crocodile skin – a fully-working original amp with an early printed circuit board and original Goodmans speaker, looking and sounding fantastic."

Rarity certainly is the dominant theme of Marsh's collection, as we discover when another batch of amps is unboxed from storage.

"Vox JMI need no introduction for their contribution to British guitar music," he says. "My early-60s Vox Domino is an uber-rare version of the Vox AC4 from the Vox Domino student range. It is identical in terms of circuitry to the AC4, but was produced in much lower numbers, and normally in black with silver piping, but this one is completely original in black and white with gold piping, and may have been an early prototype.

"Some of the early British brands have had their collectability boosted by the fact that many a famous artist used them in their early days of stardom. For example, Sir Paul McCartney in The Beatles and Dave Davies of The Kinks used Elpico amps. I've got an early prototype AC Series combo from '55, too, that's now incredibly rare.

"There were so many British brands striving for glory back then, like Fenton-Weill, built by Henry Fenton again in the early 60s, who was an early business partner of Jim Burns. I have one of his >

Top left **1960 Watkins Copicat, Watkins 1954/5 Style 1 Clubman, Watkins 1954 prototype Westminster TV Front (rear)**
Top right **Control panel on Vox Domino**
Above left **Vox Domino**
Above right **Early prototype Elpico AC Series combo**

Top left **Fenton-Weill Stereo Reverb**
Top right **Dynacord Echochord Super S62 (top), Klemt Echolette NG51S**
Above left **Dynacord KV6 rear**
Above right **Dynacord KV6 front**

innovative Stereo Reverb units, which not only contained a spring reverb and a preamp – similar to the early Fender reverb units – it also had an amplifier and speaker for standalone use as a practice or a satellite amp, giving it a stereo capability.

"We have to admire and acknowledge Charlie Watkins for his Watkins Copicat tape echo unit, and I have a Mk II version in blue and white from 1960. Then, of course, there are his wonderfully designed amps that involved wacky-looking aesthetics while experimenting with combos with TV fronts.

"Dynacord and Echolette, both respected German amplifier manufacturers in their own right, also produced cool analogue tape echo units. These are highly sought after and are ideal as high-gain guitar preamps, as well as offering lush reverbs and delays. I've got a Dynacord Echochord Super S62 with an array of push-button repeats and a Klemt Echolette NG51S, which is also a highly prized tape echo/reverb and valve preamp/signal booster. Known as the 'Gold Box', it featured prominently in the recordings of The Beatles. Both these superb metal boxed units have the 'winking eye' signal light.

"I think German-made combos from the 60s are often overlooked, like my lovely little Dynacord KV6. It's a marvellous six-watt harp amp and much sought after – and as a small guitar amp, too. It's a very clean piece with completely original and untouched electrics and 110-volt tappings for use in the US.

"Dynacord's flagship combo was arguably the 30-watt Dynacord Rex with 2x10 Isophon Gold speakers, tremolo, echo, send and return, 2x EL84 valve line-up, solid state rectifier and ECC83 preamp valves. The electronics are similar to the later Marshall 50-watt combos, but much more reliable I feel. It's an amp that also looks good in a modernist living room."

Finally, Marsh shows us a couple of more obscure models from arguably the world's biggest name in rock guitar amps.

"For the last couple of amps," he explains, "I thought I'd creep into the 70s with a highly prized and very rare Marshall Lead and Bass 50 head made only from 1973-76 with a matching 2x12 cabinet.

"Finding the head and cab separate was really unusual, as most were produced in 2x12 combo format, as favoured by Paul Weller. They were produced in limited quantities specifically for mail order and only available in the UK."

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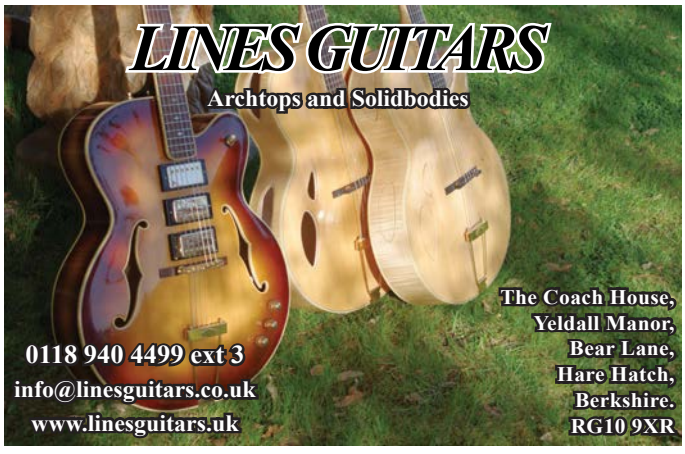
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All about... Power Valves

Following last month's focus on preamp valves, this issue the spotlight falls on the power valve – a major part of the sonic signature of any guitar amp. **HUW PRICE** explains all...

There are many misconceptions about power valves, and most stem from over-emphasising the sonic characteristics of the common types. Putting a pair of EL34s into a Twin Reverb will not guarantee you a classic British rock tone any more than installing 6L6s in a Hiwatt will make it countrified.

Granted, all the classic guitar amp power valves have sonic flavours, but the parameters are wide. To understand how power valves will sound, you need to consider the way they operate within an amp circuit, the design of the power supply and preamp, and the speakers and cabinet.

The classic blues and rock tones of the 60s were made with non-master volume amps, so the overdrive came from the preamp and power valves. This is the fat, touch-sensitive creamy tone many players love, but often there's not enough gain, punch or low-end tightness for modern rock styles.

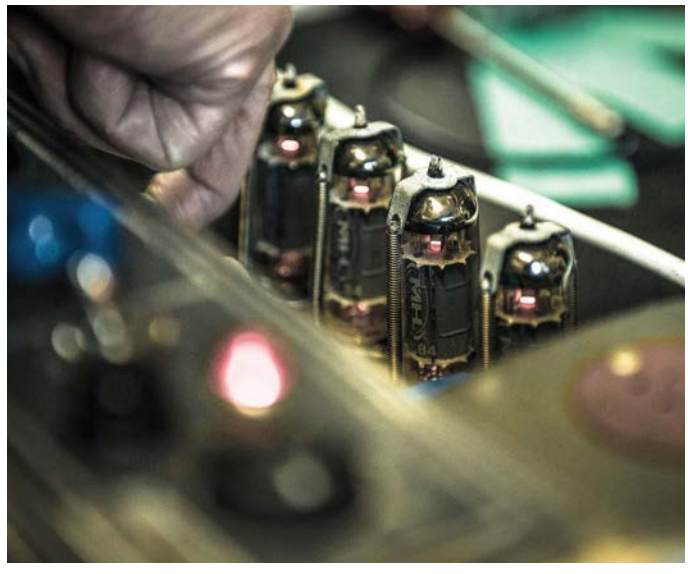
Power valves that overdrive and compress nicely may sound good in retro-style amps, but aren't necessarily the best option in high-gain amps, where the ability to stay clean and deliver power are more valued attributes.

High-gain amps are designed to generate large amounts of gain in the preamp, and the power amp tends to run clean to maintain the tight and solid bass and fast transient response needed for more aggressive musical genres. If you can discern differences between power valves in these amps, they are more likely to be dynamic rather than sonic. Under normal playing conditions, it's unlikely you'll be able to push the master volume high enough for the characteristics to manifest.

Most valves work well in both classic and modern circuits, but much depends on the way they're arranged and biased. This month, we'll give a broad overview of the various types of power valve used in guitar amps and the different sonic characteristics of the combinations and biasing methods.

Triodes, tetrodes, pentodes

Various types of power valves are found in guitar amplifiers.



Most valves work well in both classic and modern circuits, but much depends on the way they're biased

We covered the workings of triodes, tetrodes and pentodes in last month's feature on preamp valves, and power valves operate on the same principles.

The earliest power valves used in audio amplifiers were triodes, and they are still highly regarded amongst hi-fi enthusiasts. However, power is very limited. Consequently, guitar amps with triode power valves are virtually non-existent, but many feature pentode/triode switching to reduce power.

Sometimes, this type of power switch is labeled full/half, but it's probably doing the same thing by effectively removing the pentode's screen and suppressor grids from the circuit and making the valve less efficient.

Have you ever wondered why you can't simply pull the EL34s out of your Marshall and drop in KT66s to get a 'Bluesbreaker' tone? It's because the KT66 is a beam tetrode – just like the 5881, 6L6 and 6V6 valves traditionally used in Fender amps. Jim Marshall probably chose the KT66 because it was cheaper and more readily available in the UK.

The EL34 is a pentode power valve, and its output impedance differs from the KT66's. Therefore, an output transformer optimised for EL34s will be a mismatch for KT66s. If you want to convert your Marshall to run on KT66s, you'll have to replace the output transformer, too, and reset the bias. The EL84 is like a baby brother to the EL34, and it's a pentode with a smaller nine-pin base.

Replacing 6L6s with KT66s can be accomplished without swapping the output transformer, but KT66s draw more current, so you have to ensure your power transformer can cope with the demand. A rebias will still be required. KT66s also put out less power, so Eric's Marshall JTM45 combo was probably producing 30 watts rather than the 45 to 50 of a tweed Bassman.

The KT88 and 6550 are other examples of beam tetrodes found commonly in guitar and bass amps. Both have featured in various high-power Marshall, Hiwatt, Orange, Mesa and Ampeg amplifiers. The KT88 and 6550 are essentially beefed up versions of the KT66 and 6L6 and have been used with great success in bass amps and high-gain guitar amps.

Single-ended

The simplest way to configure the power stage of a valve amp is to use just one power valve. This is known as 'single-ended' operation and the power valve amplifies both the positive and negative phases of the audio waveform. Examples include the Vox AC4 and the Fender Champ, which are low-powered amps. The Carr Mercury is the best of all the modern single-ended amps we've tried.

Single-ended operation isn't particularly efficient, so some single-ended amps, such as the Gibson GA-8, were configured with two power valves working in parallel for higher output. It's known as 'parallel single ended'. The inefficiency, coupled with a tendency to produce ear-friendly even-order harmonic overtones when clipping, makes single-ended amps popular for practising and recording.

Push-pull

The vast majority of amps work in push-pull – meaning that one valve amplifies the positive side of the cycle and the other amplifies the negative. For more power, the amp can have four, six or even eight power valves working together, so long as there are an even number of valves working on each side of the audio signal. This is 'parallel push-pull'.

In single-ended amps, the power valve is working all the time but in push-pull, power valves can potentially take a breather when they're not needed. Sharing the workload means push-pull amps are more efficient and powerful with less harmonic distortion.

Class distinctions

Typically, power amp operating conditions are referred to as Class A and AB. These designations are descriptive rather than qualitative, so Class A is different rather than superior to Class AB.

Remember I mentioned how power valves can 'rest' for portions of the audio cycle? Basically, that's class AB and it's a relatively efficient set-up that makes amps sound louder, firmer and punchier. Higher-power Fenders, Marshalls, Hiwatts and Mesa/Boogies all work in Class AB.

In Class A, the power valves never shut down, so they're all working continually. All single-ended amps operate in Class A, as do many of the lower-power tweed classics such as the Deluxe models. Contrary to popular belief, the Vox AC15 and AC30 >

are not Class A amps. This less efficient configuration generates more heat and produces a creamier and softer overdrive with more harmonic complexity.

Ultimately, it's not a binary thing. Amp designers manipulate DC supply voltage and bias to determine where on the A–AB spectrum an amplifier operates.

Bias view

Two methods of biasing power valves are used commonly – fixed and cathode bias. It's a complex subject, but fixed bias tends to be used in higher-power amps or when clean headroom is a priority. You'll find it in Fenders over 20 watts, Marshalls and most high-gain amps.

A negative voltage from a power transformer is 'half wave rectified' by a diode and connected to the power valve grids via bias and grid resistors. The bias is adjusted by altering resistor values, or by using a bias potentiometer.

Cathode biasing is simpler because it is, to an extent, self-adjusting. Just like the preamp valves, the power valve cathodes are connected together and then connected to ground via a bias resistor and a capacitor wired in parallel. If you buy a new set of power valves for a cathode-biased amp you can simply replace the old ones and you're good to go.

However, with fixed-bias amps you will need to check and adjust the bias with the new valves installed to ensure they're working within the recommended parameters. This is why straight swapping 'tone tests' with fixed-bias amps produce spurious results unless the amp bias is reset for each new set of power valves.

Both cathode-biased and fixed-bias amps can operate in Class A or AB. However, those biased in Class A (or thereabouts) are usually cathode biased. Therefore, Class A characteristics of harmonic richness and chime, soft low end and smooth distortion tend to be associated with cathode bias. Examples include tweed Deluxes, vintage Vox amps and modern classics from Matchless and Swart.

Fixed bias is invariably used for higher-power amps, where volume, punch and solidity are priorities. The tone tends to be more direct, less compressed, harmonically rich and touch dynamic. Fixed-bias Class AB amps also tend to have negative feedback, where a portion of the output signal is reintroduced to an earlier stage in the circuit. This further tightens the sound and dynamics, and prime examples are Marshalls, high-power tweeds, post-50s Fenders, and all of the usual high-gain suspects.

Verdict

Simply telling you to buy EL34s for classic rock, 6550s for metal and 6V6s for blues would have been easy but misleading. Hopefully, this article has demonstrated that determining an amp's bias point, bias method and negative feedback gives far more reliable tone indicators than numbers printed on a glass tube or the brand name on a box. Simple answers are lovely, but sometimes there aren't any.

BUYER'S GUIDE

New, new old stock and used valves are readily available. Buying from an established valve retailer such as those below should allow you to get a refund if the valve fails within its warranty period. Some will test for low noise and microphony. Buying from private individuals may be cheaper, but also riskier.

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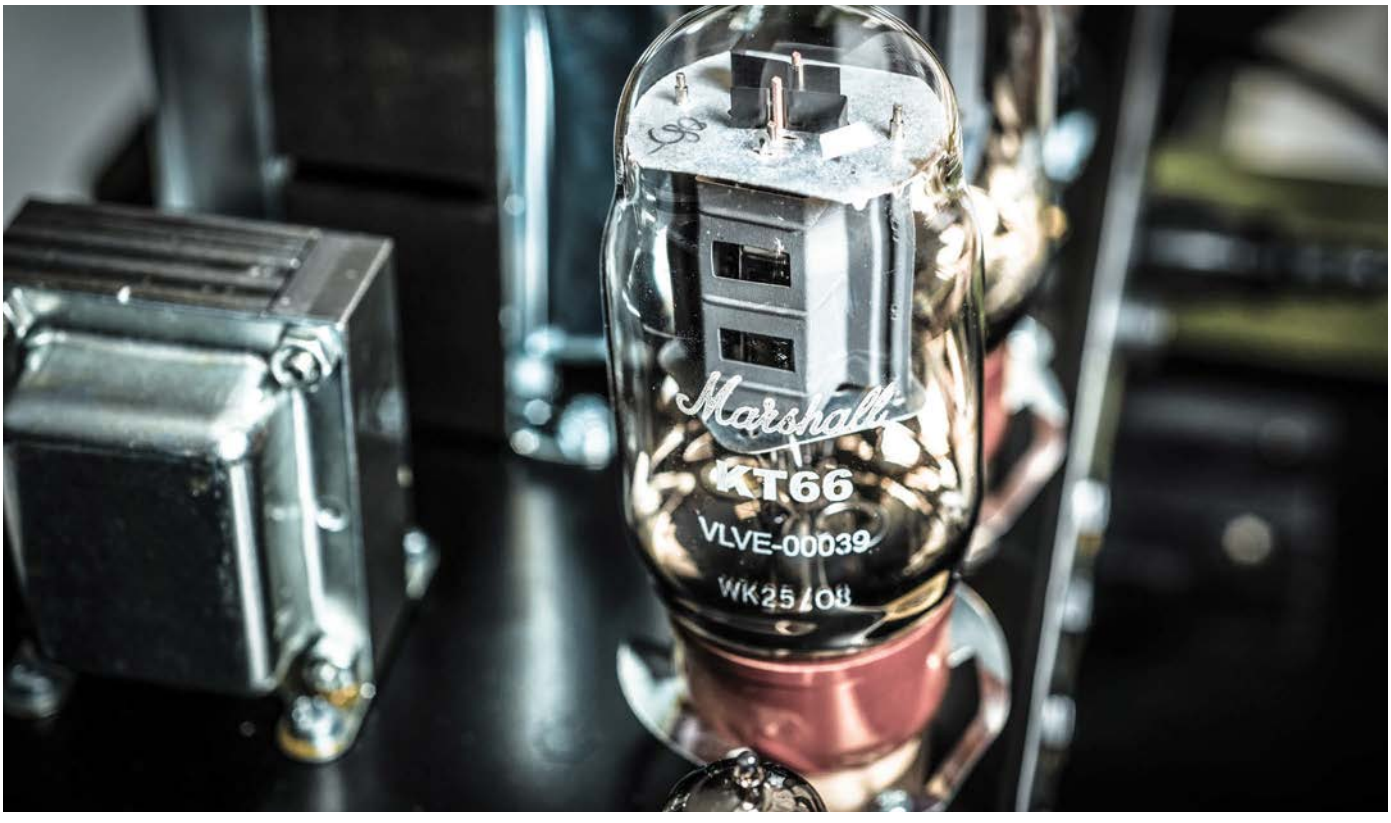

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Chord Clinic

Continuing last month's study of DADGAD tuning, we present part two, in which – among other things – high-position chords are mixed with open strings. **ROD FOGG** gets suspended...

There are few things more satisfying in music than the sound of a suspended chord resolving to its major. At least, that's what we think here at *G&B*. So let's get started with the first two chords in figure 1, assuming that your guitar is still tuned to DADGAD from last month...

Notice the rich and chiming effect of the high notes sounding against the droning open strings, and just play the two chords back and forth in any rhythm that suits you. Then try adding in the next two chords, either as a four-chord sequence or by just selecting any two from the four and changing back and forth between those.

You could also try adding in the low open D and A strings for added weight, but we feel the lightness created by sticking to four-note voicings is one thing that makes this sequence sound so special. You could also experiment with other places on the neck where this two-finger chord sequence would work, perhaps referring to the cascading chords section of Led Zeppelin's *Kashmir* for inspiration. For more experimentation, try inverting the idea by holding onto the note on the G string and dropping the note on the top string down a couple of frets, and then moving that shape around.

If it sounds good – great. If not, try it at a different fret. These ideas work because the music is grounded by the open D and A pedal notes.

Figure 2 takes advantage of one of the most distinctive features of DADGAD tuning, which is that the second and third strings are tuned only a tone apart. This means that stacking notes very close together, or even having unisons within a chord, is much easier than with standard tuning. In the first two shapes, there is only a semitone (or one fret) between the G- and A-string notes, which gives these chords their ambiguous quality. We are using the open A string as a pedal note, and both chords contain a major third and a perfect fourth, which, as a result of chord-naming conventions, is called the 11th.

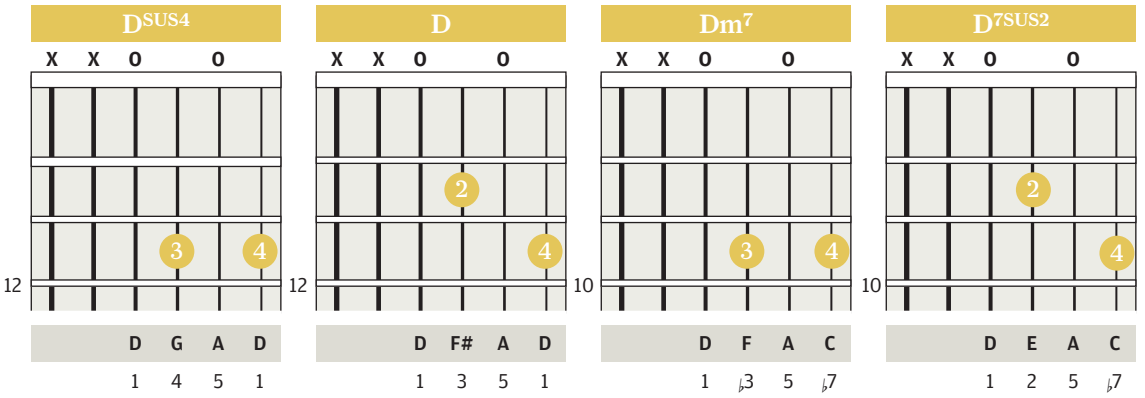
The third and fourth chords in figure 2 modify the first two shapes by releasing the second finger. This adds an open G pedal note and removes the major third. These two chords lack the shimmering density and warmth that the major third provides in the first two chords; however, instead they seem to have a desolate and bare quality that could speak of moorland and glen... or of wide-open prairies... or maybe our inner romantic is coming on a bit strong. Tidy fingering is needed to hear these chords ring clearly.

Figure 3 starts off with what looks like a nice familiar C major chord. Except that, because of DADGAD tuning, this chord produces a C9, with all the notes piled up in successive thirds (root, third, fifth, seventh and ninth). Releasing your first finger replaces the seventh in the chord with the sixth, adding some interest as you switch back and forth between the two shapes. The next two chords take the same idea to F9 and F6/9, including the wiggling first finger routine, meaning that you could work out something that switches back and forth between C and F over two or four bars.

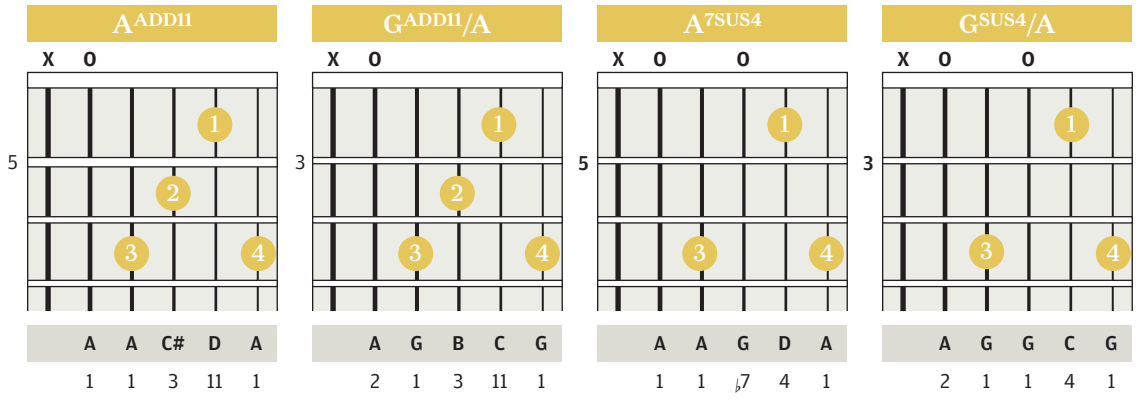
If we pursue the idea that we might be able to work out some kind of DADGAD blues in C, based around ninth chords of C, F and G, all that is missing is some kind of G9. Enter figure 4, which kicks off with a couple of voicings of G9 – the first of which is something of a stretch but well worth it. Switch between the two in each bar to keep things interesting. Changing key, a blues in the key of G would start on these two G chords and then move to C9. To complete the set, we would need D9; however, the last two chords in figure 4 are D7add11 and D7, which will do the job just as well.

Often when messing around with chords in DADGAD tuning it seems easy to come up with chords with a suspended second or fourth, or an added 11. This is not surprising considering the suspended nature of the open strings, which if viewed as a chord >

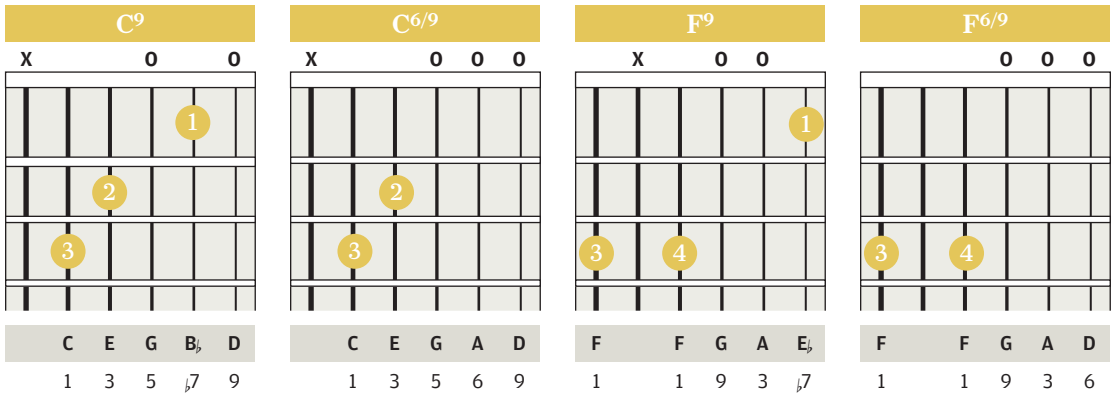
It takes two (Fig 1)



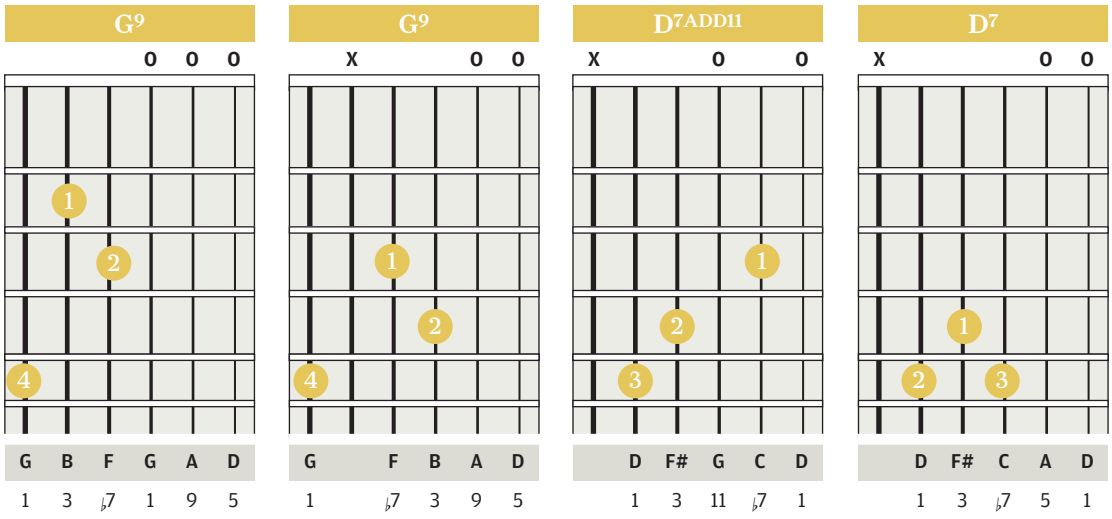
Up to 11 (Fig 2)



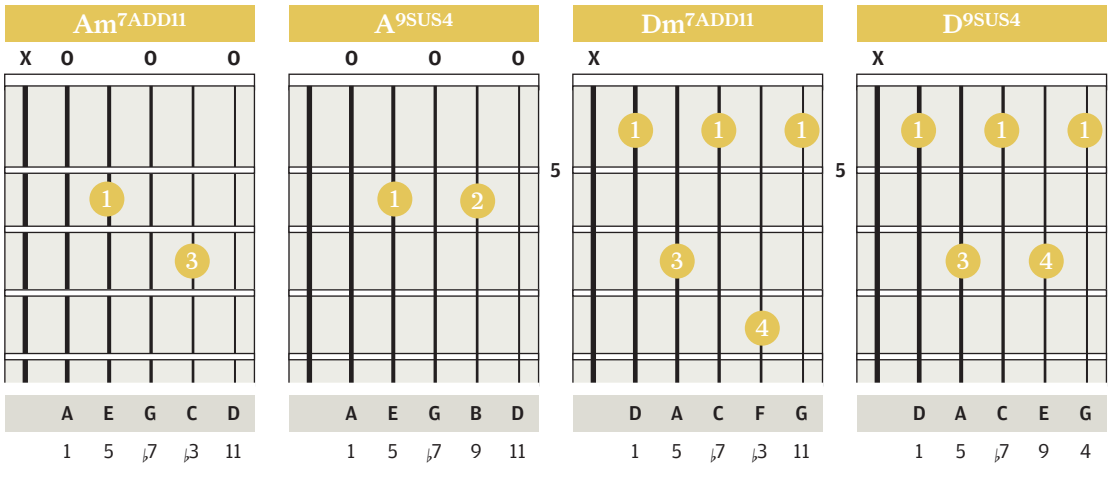
From C to F (Fig 3)



Walk the nine (Fig 4)



A minor change (Fig 5)



produce Dsus4. Minor chords, on the other hand, happen less frequently; and in fact it can be quite hard work to find them. Figure 5 attempts to redress the balance in favour of minor chords with an easy-to-play Am7add11, which can be turned into a barre chord and played at any fret – the example given here at the fifth fret produces a Dm7add11. The other chords in figure 5 appear to be based on the open-string A7 chord from standard tuning – but in DADGAD this shape gives us A9sus4.

Suspensions, as we mentioned, can be hard to avoid, but they are the essence of the folky, Celtic, wide-open spaces sound. By the way, now that you have A9sus4, you could try playing a DADGAD blues in the key of D, using the D and G chords from figure 4 and this A9sus4 chord. That makes three keys – and none of them will sound anything like a blues in standard tuning. There's even more DADGAD to come next month...

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Fretbuzz

Your letters. This month: string trees, tailpieces and the vintage guitar dilemma

LETTER OF THE MONTH

Vintage repairs

I have an old 1962 Fender on which I am planning getting some fret work done, for tuning up the neck. Do you have an article on what one should and should not repair on a vintage guitar? Thank you.

John Hancock, via email

G&B Huw Price writes ***To my knowledge, we have never published an article such as that because there are no absolute rules on what you should and should not do. Completely original examples of vintage guitars are few and far between.***

Back in the day, most viewed old guitars as 'second hand' rather than 'vintage', so we were less precious and respectful. Now that values have sky-rocketed, attitudes have changed. You are the owner of this '62 Fender and it's yours to do with as you see fit. Common sense should tell you that stripping an original finish or drilling wider holes for modern-style tuners will devalue an instrument. The same can be said for replacing pickups and stripping out controls and wiring.

Things get more complicated when we consider wear and tear issues that affect playability. No rational person would argue that a vintage guitar is devalued if it no longer has its factory-fitted strings, and this viewpoint is shifting the goalposts on what is and isn't permissible. Maybe 20 years ago original frets had some collector appeal, but now these guitars are over half a century old a really good refret is deemed acceptable.

Similarly, if there's enough fret height left, don't hesitate to have them levelled and recrowned. Bear in mind that replacing the frets may render an original nut unusable because the slots may be too low for the taller frets. The slots can sometimes be packed and reslotted, but usually a new nut has to be cut. From a collector's perspective, you might like to consider spec'ing vintage-correct wire. From a player's perspective, you may opt to go with a wire gauge that you best enjoy playing.

Vintage guitars fall on a spectrum between 100 per cent original 'investor grade', mostly original 'collector's grade' and modded/refinished 'player's grade'. If a guitar is of museum quality and virtually factory fresh, a refret will almost certainly detract. On the other hand, player-grade vintage guitars do not attract serious investors. These are the ones us mere mortals may, just about, be able to afford. They're also the ones we can use out there in the real world and, since they are prized for their playability, anything that enhances playability should be regarded as a positive.

So decide where your '62 Fender sits on the spectrum, figure out your priorities, and if you decide it would benefit from a refret without losing value, then have at it. But if you also decide to fit a locking vibrato system, remember we know where you live and one day the guitar police will be paying you a visit...

WRITTEN A LETTER OF THE MONTH?

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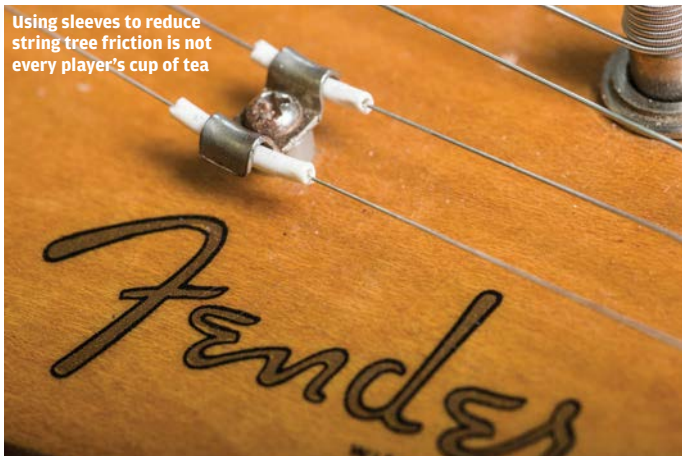

Using sleeves to reduce string tree friction is not every player's cup of tea

Tailpiece of my mind

Having read what Andrew Lines wrote [Fretbuzz, *G&B* August 2016] about how the distance between a tailpiece and the bridge on a Gibson ES-335 (or any guitar with this set-up, in my opinion) influences the feel, playability and tension of the strings, I totally agree.

When these two parts, which are in direct contact with the strings, are placed a short distance from each other the feel is almost like playing a Les Paul Junior with a stop tailpiece – which gives a tight and direct response. With a longer distance and a longer afterlength of the strings, a Gretsch 6120 with a Bigsby feels looser and sounds more mellow – as Andrew wrote.

I have noticed from looking at pictures of Larry Carlton's favourite guitar – his '69 Gibson ES-335 – that the tailpiece is placed quite far from the Tune-o-matic bridge, and I am quite sure that this factor must have influenced his playing and the development of his signature tone. Small details can make a difference. Anorak material? Black tolex of course! Thanks for a great magazine!

Helge Hovland, Norway

G&B While debate continues to rage about the science involved, the distance between bridge and tailpiece, and the break angle over the bridge, does seem to have an impact on perceived string tension. As always we'd recommend experimentation!

Screaming trees

I want to talk to you about string trees. I know what they are for, but not why anyone thought it was okay to put them there in the first place. Looks have a big impact on the guitars that I buy or would love to own and I don't think that applies only to me! A lot of thought, time, effort and skill goes into making them, and then someone sticks a cheap-looking bit of bent metal on the headstock. It's like making a beautiful oak dining table with one leg shorter than the rest so you have to stick a book under it to stop the table wobbling. In your Strat set-up supplement, you advocate either removing the trees by winding the B and E strings to the base of the posts, or using electrical cable insulation to reduce the risk of string breakage. One suggestion leaves screw holes on show, and the other... well, aesthetically speaking, the less said about that the better. Is it me?!

Roger Fowles, via email

G&B Hi Roger. Nobody on the team has particularly strong feelings about string trees. How do you feel about a round, '50s-style retainer?

HAVE YOUR SAY! Write to us via snail mail, *Guitar & Bass, Anthem Publishing, Suite 6 Piccadilly House, London Road, Bath BA1 6PL* or email **guitarandbass@anthem-publishing.com.** Alternatively, get in touch via social media on Facebook or Twitter.

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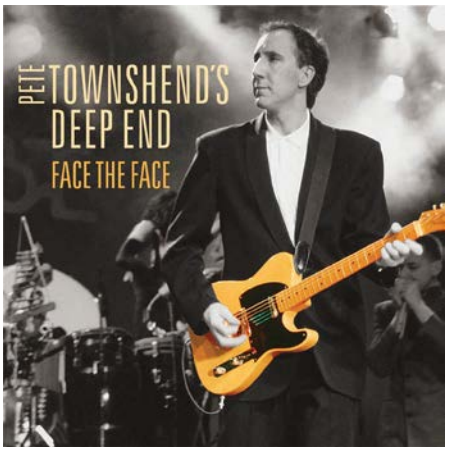
New music

We round up and rate a selection of this month's guitar-driven album releases and reissues



Pete Townshend's Deep End

FACE THE FACE

Pete Townshend's very short-lived supergroup Deep End may have added little to his sizable legacy, but it did boast the tantalising prospect of featuring Pink Floyd's David Gilmour on lead guitar. Three Who oldies punctuate proceedings on *Face The Face*, a 1986 live recording from Cannes for the *Rockpalast* TV show as Townshend toured his so-so solo album *White City: A Novel* – a steady if unspectacular effort. A Who meets Floyd mash-up of guitar styles could have been a stellar occasion, but Gilmour is on pretty subdued form here, in the main dutifully serving the songs rather than showboating. The band can no doubt play, but with the exception of Who classics such as *Won't Get Fooled Again* and *Behind Blue Eyes,* plus *The Sea Refuses No River* and *Give Blood*, the material rarely gets off the ground. **SH**

6/10

TRY IF YOU LIKE *The Who, Steve Winwood*

The Rolling Stones

THE ROLLING STONES IN MONO

Pretty much the Stones motherlode in one fell swoop, with a handful of exceptions you could argue that this is all you'll ever need from Mick, Keef and Co. These 15 CDs cover their rough and ready eponymous debut in 1964 through to 1969's imperious *Let It Bleed,* plus *Stray Cats* – a new collection of single A and B-sides plus EP tracks. The out-of-character psychedelic blip of *Their Satanic Majesties Request* aside, where they temporarily backed the wrong horse, the quality threshold here is astonishingly high. The gutsy unpolished early R&B covers sound great on these mono mixes, as does their brief flirtation with baroque pop. *Beggars Banquet*, meanwhile, is an embarrassment of riches. A mono box perhaps, but multi-faceted and three-dimensional in every respect. **SH**

9/10

TRY IF YOU LIKE *Muddy Waters, The Animals*

Eric Johnson

EJ

Eric Johnson's first all-acoustic album has more than a few surprises in store for his loyal fans – there's plenty of him playing piano, for a start. What isn't surprising, however, is that the fire, precision and inventiveness of his celebrated electric style translates effortlessly to the world of wood. Whether he's playing his 1980 D-45 or a Ramirez nylon string, or duetting with the equally astonishing Doyle Dykes, his picking and chordal technique is flawless: a mercurial meld of jazz, blues, flamenco, folk and more. Aside from the instrumental guitar pieces, there's an intriguing approach to the cover of Hendrix (*One Rainy Wish*), a reimagined *Scarborough Fair* that's a bit of a mis-step, and a selection of Johnson's own picking-and-piano-led ballads – but it's in the instrumental realm that his true talents shine. **CM**

7/10

TRY IF YOU LIKE *Tommy Emmanuel, Isaac Guillory*

Aynsley Lister

EYES WIDE OPEN

There's a raw, road-honed self-confidence throughout Lister's latest offering – he calls it a "return to his roots", and it's all the better for it. There's maturity to the arrangements, and the essential ingredients for a great modern blues record – emotive vocals, a band with proper dynamics and feel, a mix of songwriting styles and stinging, fluid, passionate lead playing – are all here. **CM**

8/10

TRY IF YOU LIKE *Eric Clapton, Ray Charles*

Jack White

ACOUSTIC RECORDINGS 1998-2016

Jack White is one of the most thrilling electric guitarists on the planet but, here, his adventures with acoustic instruments are documented in a career-spanning, 26-song set. Kicking off with early White Stripes material and including rarities and alternative versions culled from Raconteurs and solo sessions, it's a beguiling, but never tiring, listen that illustrates that White doesn't need a fuzzbox to demand attention. **CV**

8/10

TRY IF YOU LIKE *White Album-era Beatles, The White Stripes*

Shovels & Rope

LITTLE SEEDS

Alt-folk duo and married couple Michael Trent and Cary Ann Hearst, aka Shovels & Rope, return here with their fifth long-player. Another varied mix of ramshackle, fragile and raucous compositions delivered with gusto, as usual it's the way that the pair's voices intertwine in shifting harmonies that proves truly spellbinding. S&R are at their best when dealing in melancholy, and *St Anne's Parade* and *The Last Hawk* are the standout moments here. **CV**

8/10

TRY IF YOU LIKE *The White Stripes, Bright Eyes*

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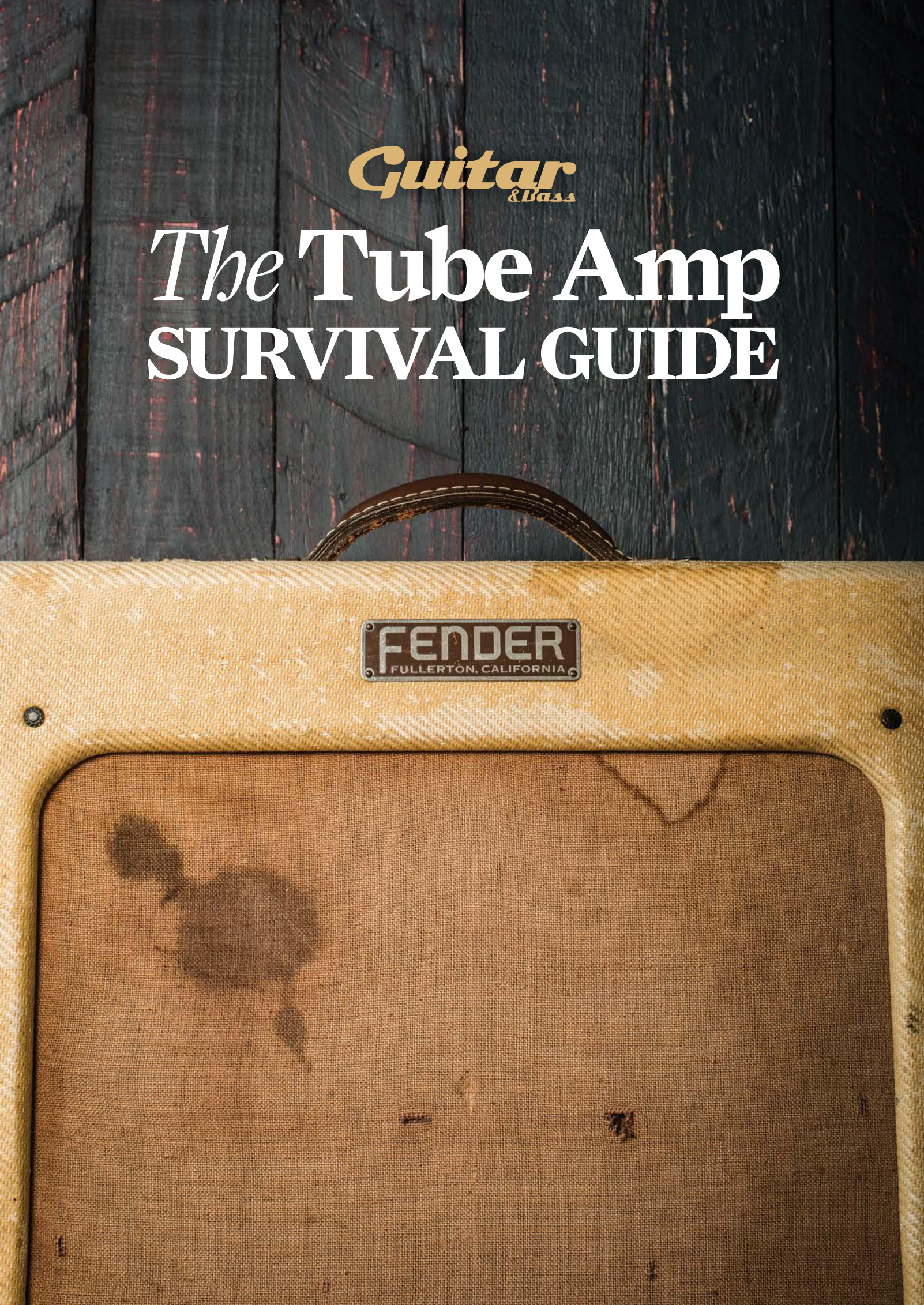
The Tube Amp SURVIVAL GUIDE



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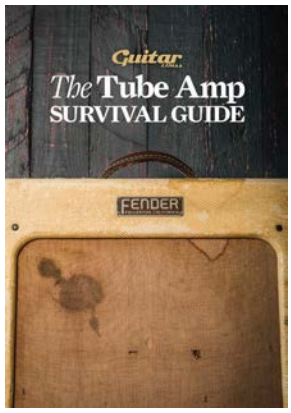
Keep on running

Not too long ago, I was reviewing a new solid-state amplifier that had been launched to a considerable fanfare, promising great valve-amp tone without the 'notorious unreliability'. As it turned out, the amp in question did sound rather good, but I had to wonder whether the credibility of the product was being undermined by such spurious marketing spiel.

Valve amps are many things, but unreliable they are not. All of the guitarists out there gigging with 50- and 60-year-old valve amplifiers – and there are plenty of them – wouldn't be doing so if their amps couldn't be trusted. Inevitably, things do go wrong from time to time and some parts eventually wear out, but most valve amps are pretty basic devices and unless something catastrophic occurs, they're simple to repair and maintain.

Our supplement this month isn't about arcane tone tweaks, trick wiring or valve voodoo. Instead, we're examining the common problems and maintenance issues that appear in all valve amps from time to time. Along the way, we'll teach you about basic fault finding, running repairs and broaden your understanding of how valve amps work. The aim is to get you and your amp to the gig in working condition, without resorting to a tech every time something goes wrong. Enjoy, but as always, proceed with caution where electricity is concerned! See you next time...

HUW PRICE Senior Product Specialist



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1
FENDER
INSTRUMENTS

1. Short fuses

We've all been there. Suddenly, and for no apparent reason, our favourite amplifier stops working just before that big gig or important studio session. Plug in, turn on and nothing happens: no pilot light, no reassuring heater glow and no sound at all. Yikes.

The first thing to do is to check the fuses. There should be one in the mains plug and another one or two mounted on the amp chassis in fuse holders. Start with the fuses in the amp itself. It's usually possible to see whether the fuse is blown, because the fuses will have glass bodies and metal caps.

If you can see something running along the middle of the glass tube connecting the metal caps, the fuse is probably okay. If you can't, then it has probably blown. If you're not sure, use a multimeter on its continuity setting to test the fuse. If there's no continuity, it's a dud.

You can use the same test for the fuse in the mains plug, if needs be. Before moving on, though, check to ensure your amp's voltage selector is set correctly. If it's at 110V and you're feeding it 240V, that will be why those fuses are blowing, so get it right.

When replacing fuses, it's important to use fuses of the correct physical size and rating. The fuses are intended to protect your amplifier and of course, by extension, you. So, if the markings next to the fuse holder say '2A Slow Blow', then that's what you should use as a replacement. 2A means two amps and 1A means one amp – so do not deviate from the specifications. Wrapping a Kit Kat wrapper around the old fuse and wedging it back in is neither clever nor safe.

Amplifiers can contain many specialist parts, but happily, fuses are easy to find. Most electrical outlets and auto-accessories shops will stock what you need.

Sometimes, fuse blowing is a one-off event and the replacement will keep going for years. But if the fuse blows every time you switch on the amp, it indicates that something within the amplifier is drawing too much current. The challenge is to find the cause, and it's not as daunting as it may seem. But we'll get onto that next.

WHAT'S HAPPENING?
The amp is showing no signs of life

WHAT YOU NEED
A box of the correct fuses, a multimeter

1 It helps when the fuses are accessible from the outside. Most amps are like this, but some have fuses inside the chassis, so partial dismantling is required

2 The fuse rating is usually marked on the chassis – if it isn't, then check the manual or find a schematic online. Never exceed the specified fuse rating

3 This multimeter is on its continuity setting – denoted by a speaker icon. If the fuse is good, the meter will make a noise and if it's blown, the meter will remain silent

1

2. Tube trouble

Various types of valve are used in guitar amps: you will come across preamp valves, power valves and rectifier valves. The rectifier valve forms part of the power-supply circuit and it helps to convert the alternating mains current coming out of the wall socket into the direct current that amplifiers feed on.

So, what happens if the pilot light comes on but there's nobody at home? If you can see the valve heaters glowing but no noise whatsoever is coming from the speakers, you can conclude that mains electricity is reaching the power transformer and the heater voltage tap is illuminating the pilot light and the valve heaters, but no juice is reaching the valves.

The chances are that your rectifier valve has failed, and you can test this by replacing the rectifier with one that is known to be good. Again, you have to make a like-for-like substitution, but if fuses don't blow and your amp starts making noises again, then congratulations on completing a successful repair.

Okay, so it's time to get back to diagnosing the fuse-blowing issue. If a fuse blows when the amp is still in standby mode, the only valve that can be the cause of this is the rectifier. As before, substitute a known good one and you may fix the problem.

If the fuse blows when you take the amp out of standby – or when you power up an amp with no standby switch – nine times out of 10, the problem can be traced to a valve, and identifying the culprit is a simple procedure.

Turn off the amp, remove all the valves, replace the blown fuse and turn the amp back on. If the fuse blows again, you can be certain the problem is not valve-related and there may be a transformer issue. This is the point where most of us should probably take our amps to our tech. If the fuse doesn't blow, it's game on.

Turn the amp off again, insert the rectifier, replace the fuse and turn the amp back on. If the fuse blows again, replace the rectifier tube and the fuse, then test the amp again.

If the fuse works okay with the new rectifier, you have probably fixed the amp. However, if the fuse was okay with the original rectifier, you will need to test all the valves one at a time. Leaving the rectifier in situ, insert one power valve and power up again. If the fuse blows, you can probably blame the tube. If it doesn't, the hunt is still on.

Continue adding one valve at a time, working your way from the rectifier through the power valves and on to the preamp valves. As soon as the fuse blows again, you can be fairly sure the last valve you inserted is the dodgy one. Replace that, along with the fuse, and you could be in luck. At this point, you may choose to pop all the remaining valves back into the amp, but there is always a possibility that more than one valve was faulty. So be patient, go one at a time and hopefully, your methodical approach will pay off.

This method won't tell you how good your tubes are, or how much life is left in them, but it can get you back up and running and it doesn't cost a thing. Remember to turn your amp off when you're putting valves in and out and don't get the valves mixed up. Power and rectifier valves can look very similar and the only way most of us can tell a 12AX7 from a 12AT7 or a 12AY7 is by reading the code on the glass.

WHAT'S HAPPENING?
The fuse blows every time you switch on the amp

WHAT YOU NEED
Patience and a methodical approach to testing

1 When you remove the valves, line them up in order or mark the chassis so you can be certain they're all going back into the correct sockets

2 You can see the heaters glowing from the top of these 6V6 power valves. This demonstrates that the amp is getting power and the fuse isn't blown

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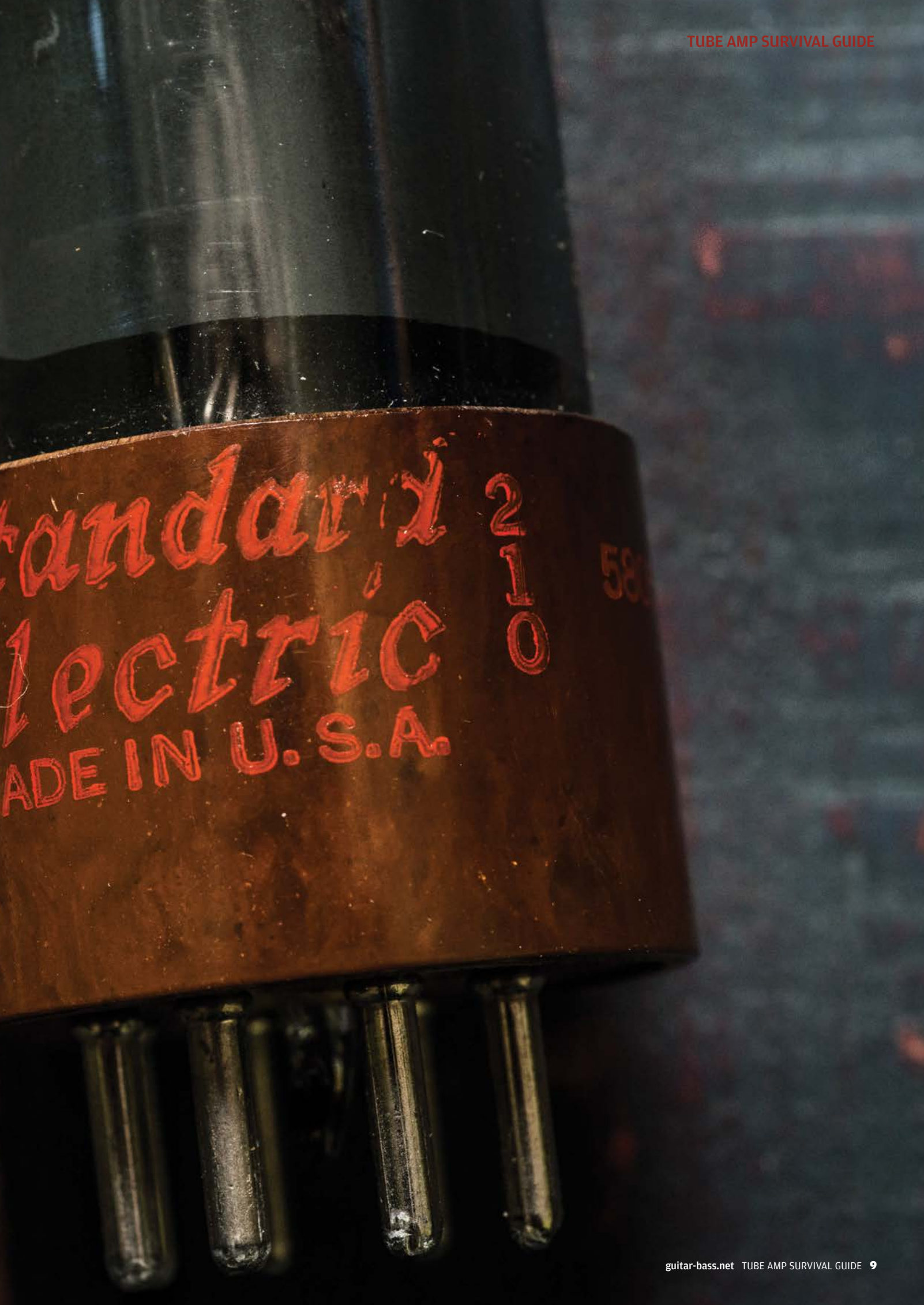
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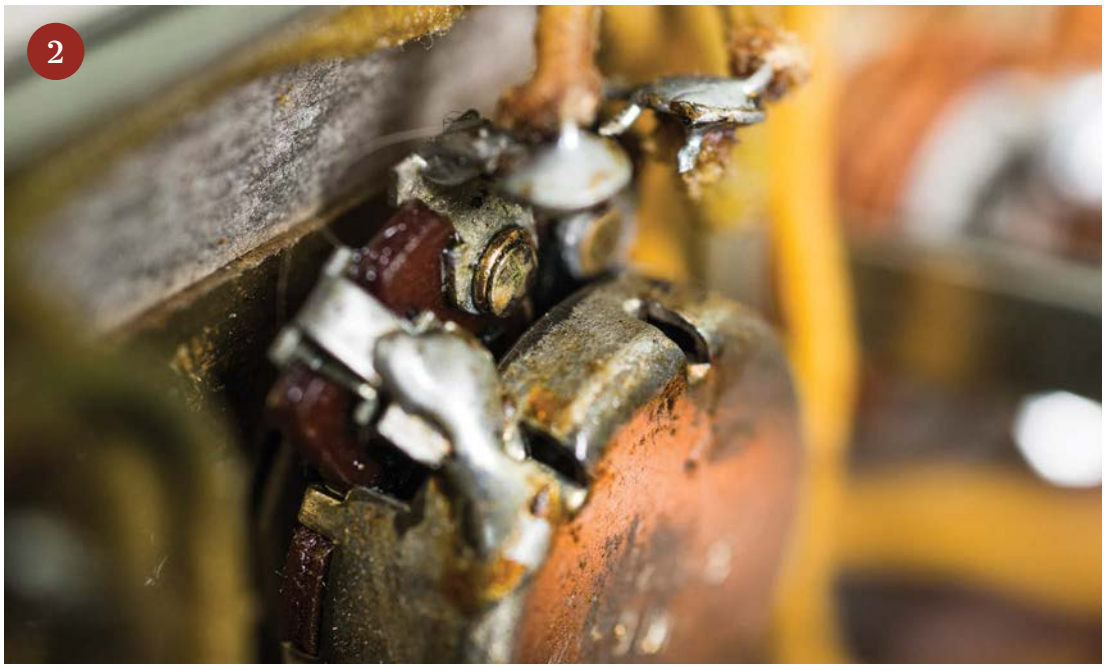

3. *Noisy pots*

It's funny how amps that are used regularly often have control pots that work perfectly. In fact, there are plenty of 50- and 60-year-old Fender amps out there with original potentiometers that are just fine. Perhaps neglect and underuse actually contribute to noisy controls more than wear and tear?

Lots of unused amps are stored in less-than-ideal environments, maybe in garages or damp lock-ups. The parts inside the potentiometers can begin to oxidise and since the controls remain static for extended periods, the oxide builds up because the pot wiper is not continually scraping it off.

Corrosion prevents the wiper from making proper contact with the tracks inside the casing and you may hear crackling, humming or continuous noise as a result. Pots can sometimes short out so they don't have any effect, or they may even seize up so they can't be turned at all.

Fortunately, there are products that can clean and revive control potentiometers that may have seemed like basket cases. Contrary to popular myth, WD-40 is not one of them and you really shouldn't spray it anywhere inside an amplifier or guitar.

The range of suitable products is pretty wide and you can check out Servisol, DeoxIT D5 or DeoxIT F5. These products are readily available online or from electronics outlets. The DeoxIT D100 and F100 are stronger solutions and DeoxIT's D series offers the best cleaning properties, while the F series also lubricates as it cleans.

If a pot is both noisy and stiff, you might want to clean it with some D5, then lubricate it with F5 afterwards. What all these products have in common is that they come in aerosol form, with thin tubes that affix to the spray nozzle and direct the product into hard-to-reach areas.

And that's the main issue here, because you will need to open up your amp to gain access to the potentiometers. Assuming you're okay with that, you'll find that pot casings have an opening just below the solder tags and maybe a few others around the edge of the casing. Give your cleaner can a good shake, insert the tube into the nearest available opening and give the potentiometer a blast.

Lots of excess fluid will drip out, but don't be concerned, because it will dry off quite quickly. Straight after spraying, twist the pot shaft back and forth rapidly to help dislodge the contaminants. You may need to repeat this process a few times before you're done.

If you're nervous about getting inside your amp, but you would like to try cleaning the controls, there is a product called the Pot Cleaning Cap. You remove the control knob, screw the cap onto the pot shaft and insert the cleaner tube through a hole in the side of the cap.

This forces the cleaner down the shaft and into the potentiometer itself, but the Pot Cleaning Cap is compatible only with CTS-style pots with 3/8 shafts and 32 threads. It won't work with metric Alpha pots.

If cleaning doesn't work, the pot may have reached the end of its working life and it will need to be replaced. It's a routine job for most techs and easy enough for most competent hobbyists – however, swapping the pot might not be a guaranteed cure. Stray current reaching a pot can cause it to be noisy and the cause of the noise can be hard to trace.

That applies to volume controls on guitars, too. In fact, if your amp and guitar volume controls both sound scratchy, try placing a buffered effects pedal between the guitar and amp. If your scratchy guitar volume is cured, it means there's stray current getting to the guitar cable. If your amp volume control still sounds scratchy after the pot has been changed, it's probably stray current getting to the potentiometer and that's something a good tech will be able to trace and rectify.

WHAT'S HAPPENING?
Scratchy sounds when you turn the controls

WHAT YOU NEED
Contact cleaner

1 This volume potentiometer is getting a squirt of contact cleaner. Fortunately, old tweed amps like this are easy, because you can get at the pots simply by removing the back panel

2 Most pots have a big gap in the cover right next to the solder tags. If the orientation of the pot makes it impossible to access this gap, try squirting the cleaner into the smaller vent holes in the cover

RCA
5881
RCA

1

4. Nasty noises

As much as we love them, valves can make bad noises as well as good ones. Perhaps you've noticed a metallic tinkling sound coming from your amp while you're playing? How about a squealing or ringing tone that isn't unlike feedback? These are symptoms of one or more of the valves becoming excessively microphonic. If this is happening to you, then you'll be pleased to learn that the procedure for finding the dodgy ones is easy.

Turn your amp's volume up to your usual playing level and gently tap each preamp tube with the blunt end of a pencil. If a valve is microphonic, you should hear the tapping noise coming through the speaker. With two-channel amps, test the valves using both channels, because some of the valves may not be shared. This can happen to power valves, too, because the cause of microphony is a loosening of the metal parts within the tube. This may manifest itself as a rough or unpleasant type of distortion.

The thing is, it's easier to hear the issue when the valve in question is closer to the input, because the noise goes through more amplification stages.

Another way to test the valves is for an assistant to hold them one at a time as you're playing. Valves get hot, of course, so an oven glove will be needed to prevent fingers from getting burned. If holding a valve steady improves tone or eliminates ringing, you may have identified a dodgy valve.

Microphony is most likely to occur in preamp valves – particularly V1, which is closest to the inputs. Sometimes you can get by, or even cure the problem, by placing V1 in a different position. Try swapping V1 with the phase inverter or a tremolo tube, if they're of the same type.

You can buy heat-resistant dampening rings that roll over the glass envelope and help to minimise noise. Some manufacturers use them routinely on notorious troublemakers such as octal preamp valves and EF86 pentodes. Ultimately, however, the only sure-fire fix is a replacement valve, from a reputable dealer who tests for microphony and offers a warranty period.

WHAT'S HAPPENING?
Squealing, ringing and 'tinkling'

WHAT YOU NEED
Oven glove and pencil

1 Turn on the amp, turn up the volume and gently tap the valves with a pencil. If you hear a ringing sound or the tapping coming through the speaker, you have a microphonic valve

2 These heatproof rings can help to dampen valve microphony and they've certainly helped these 6SL7s

3 These valve retainers can prevent valves from rattling and the bonus is, they'll prevent them from falling out of loose valve sockets, too

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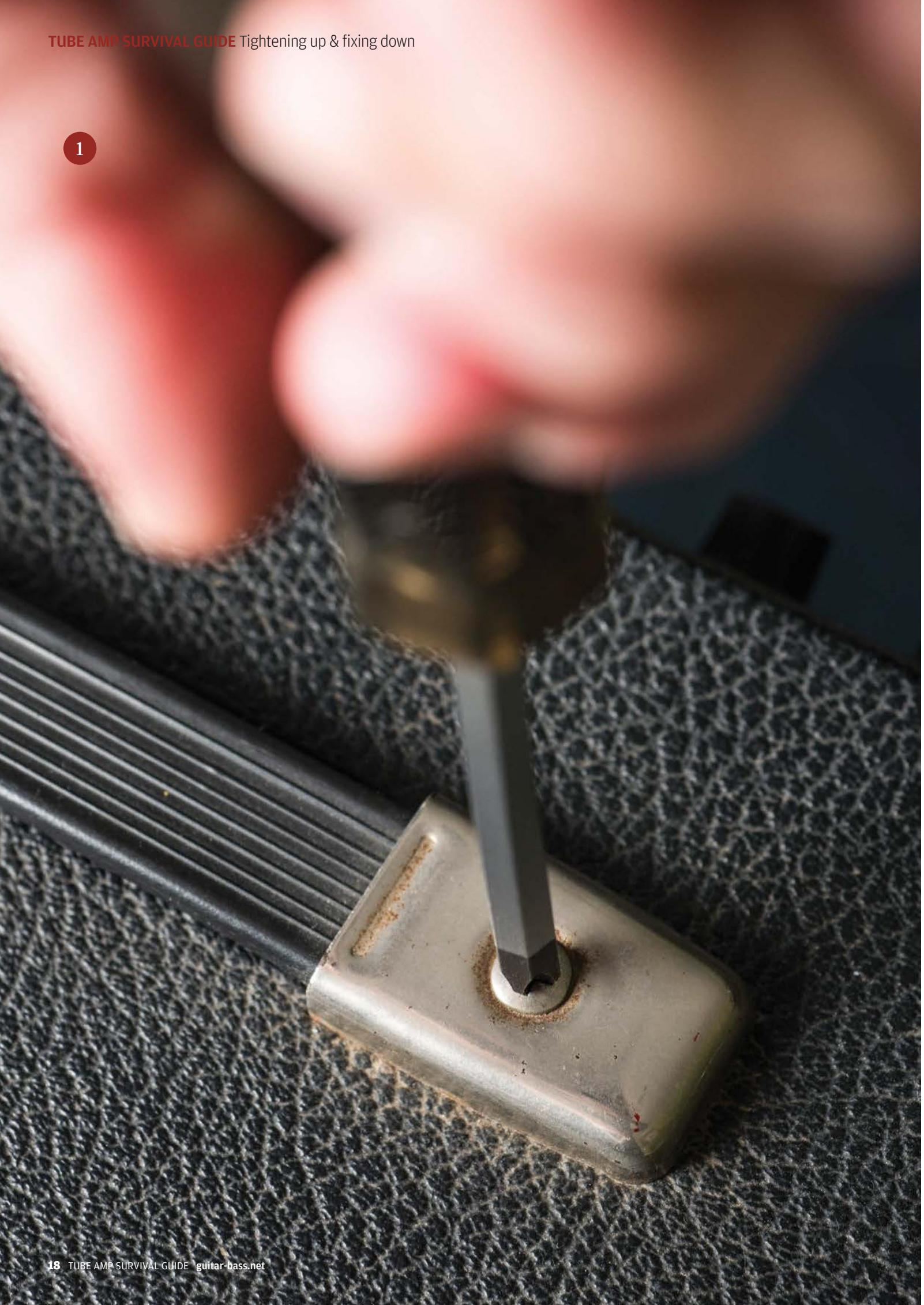
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5. Tightening up & fixing down

Even on a heavy solid-body guitar, you can feel how string vibration generates sufficient energy to make the wood vibrate. So, imagine the energy that's transferred into a combo cabinet, chassis, transformers and so forth by sending 50 watts of power through a 12-inch speaker. Now consider doing that night after night for month after month, and it's easy to understand why amp parts eventually shake loose.

When that happens, things get noisy and the buzzes and rattles can begin to drive you to distraction. Some noises will be continuous and others will set off only in response to specific frequencies. The latter type are often the hardest ones to trace and rectify.

As with electrical faults, the causes of mechanical noises can be hard to identify. Often, it's just a speaker that has seen better days – to verify that, physically separate the amp chassis from the cabinet and see if the noise issue remains.

If the noise stops, you can be pretty certain the cabinet and speaker are both fine. If it doesn't, you need to determine whether it's a noisy speaker, cabinet or both. Carefully go over the entire cabinet, making sure every screw, nut and bolt is tightened up. We're talking handle and badge fixings, baffle screws and speaker bolts – but be careful not to over-tighten the speaker bolts.

If these efforts don't fix it, next plug the amp into a speaker cabinet that doesn't have noise issues. Assuming the sound remains noise-free, you should swap the speakers from one cab into the other and play through both. If the noise issue migrates with the speaker, you'll know the speaker needs to be repaired or replaced. If the noise remains with the original cabinet, you'll know that the cabinet needs closer examination.

So, what happens if the cabinet and speaker are noise-free when the amp chassis is removed? That will tell you the fault is occurring within the amplifier itself. Again, check everything on the chassis is screwed down and tightened up. Check transformer and choke fixings, valve sockets, jack-socket nuts and all the potentiometer nuts, too.

But a word of warning – only attempt this when the amp is unplugged from the mains supply and you've established the capacitors have all fully discharged. If you don't know how to discharge capacitors safely, don't even think about working inside an amp chassis or touching components.

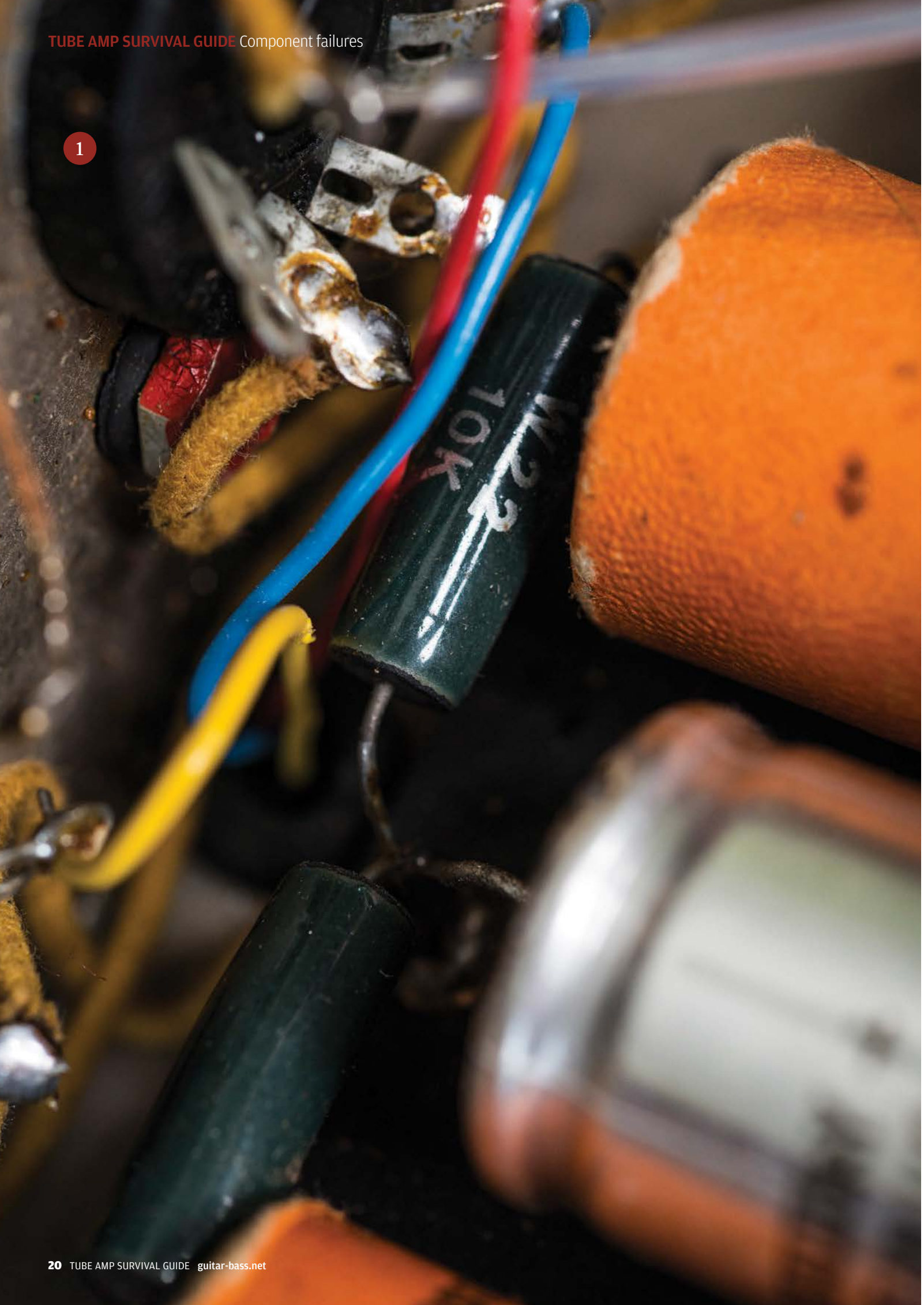
WHAT'S HAPPENING?
Buzzing and rattling noises

WHAT YOU NEED
Screwdrivers, pliers... and diligence!

1 Tracing mechanical noises can be tricky, so the best bet is to tighten everything up. Here, we're starting with the handle

2 These control knobs have been removed to tighten up the potentiometer nuts. Use a socket set or an appropriately sized spanner

3 Back-panel screws can also work loose, so tighten those, too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6. Component failures

Component failures can cause noise issues and poor tone, as well as complete amplifier meltdowns in extreme cases. Knowing what to listen for can nip any issues in the bud and may also save you the cost of more extensive repairs further down the line, when a dodgy component gives up completely, possibly causing collateral damage.

Let's start with hum – that eve-present low-frequency 'mmmmmm' that props up the noise floor of every amplifier. Some degree of hum is normal, or even inevitable, but if you feel it has become excessive, it's time to do something about it.

One cause may be failing filter capacitors in the power supply. Here in the UK, mains current alternates at a frequency of 50Hz. The filter capacitors work in conjunction with the rectifier to smooth out the power supply voltage to direct current.

A truly direct current has no sound, but if the filtering isn't working properly, the stray AC shows up at the speaker as a 100Hz hum. Another symptom of failing filter caps is an odd and out-of-tune low-frequency note tracking everything you play. Bass players can confuse the issue when they succumb to creative urges, but this symptom shows up when you're playing alone.

A 50Hz hum is one octave below the 100Hz hum produced by the failing filter capacitors – so if it's 50Hz, it's not the caps. To help you determine which is which, Google 'online tone generator', route your computer's audio output through some full-range speakers and listen to the two frequencies. If you can't hear any difference, you're tone deaf (pun intended).

A 50Hz hum is more likely to be caused by a faulty valve with current leakage between the heater and cathode. You can determine the culprit through methodical substitution. Grounding issues can also cause a 50Hz hum, but tracing those is probably best left to a qualified tech.

Popping and hissing noises are also common – especially in old Fender amps. These noises can be continuous or intermittent, but more often than not, the cause can be traced to the 100k plate resistors connected to the anodes of the preamp valves. If you're lucky, a direct replacement will get this sorted (so long as you're okay with a spot of soldering, that is).

When opening up an amplifier, it's always wise to carry out a careful visual inspection, because you can pick up on a lot of current and potential issues (puns not intended), based on the condition of various components.

For instance, electrolytic capacitors have a relatively short working life. If you can see swelling or discharge from the end of a capacitor, it needs replacing. Just take care to make a note of which side to connect to ground. These days, though, I usually take a snapshot with my phone, rather than draw a diagram.

Some resistors lead a harder life than others and the power rating of components fitted at the factory can be a tad on the marginal side. If you can see any evidence of heat damage, such as a brown or black discolouration on the component itself, it would be wise to replace it.

Check out the power-valve grid resistors, the power-supply dropping resistors and the bias resistor in cathode-biased amplifiers and replace those with high-power resistors. I always go over-spec, so if the schematic calls for a 2W resistor, then I'll use 5W and if a 5W resistor is called for, I'll install a 7W or 10W resistor.

WHAT'S HAPPENING?
Popping, hissing and humming

WHAT YOU NEED
Keen eyes and ears, the knowledge of how to safely discharge a filter capacitor, a soldering iron and solder

1 Dropping resistors in the power supply have a hard life. The original carbon-composite 10k resistors have been replaced here with wire-wound resistors rated at 22W, and should last indefinitely

2 The red end of this 25uF capacitor has swollen and burst. If you see a capacitor that looks like this, don't even bother testing it, because you can be certain it's toast

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7. Speaker repairs

You could file this one under 'repairs' or 'upgrades', because if your speaker is shot, you may treat this as an upgrade opportunity. So how can you tell when a speaker needs repair or replacement? The most obvious indication may well be no sound at all – although that might mean the amp is toast.

There's an easy way to test if it's the speaker. Disconnect the speaker and measure across the terminals using a multimeter on its lowest resistance setting. If it's an 8-ohm speaker, the resistance reading should be in the general ballpark.

If there's no resistance reading at all, the voice coil has probably burned out. There is another test you can do in addition to, or instead of, the multimeter test if you haven't got one. Take a nine-volt battery and touch the terminals to the speaker connectors. If the speaker is working, you should hear a loud pop, but if the speaker remains silent, you can be sure it's repair or replace time.

Not all speaker issues are binary. A speaker may be working, but the sound can be weak or distorted. When they've been pushed too hard, speakers can develop buzzing or rasping that's easily confused with the mechanical noises we discussed earlier. Sometimes, this is caused by a split cone or a tear around the edge of the speaker where it attaches to the basket.

The speaker might sound fine at low volume, but the issues will manifest as you crank up the amp. To determine whether it's a speaker issue or something else, simply plug the amplifier into a different speaker cabinet. If the amp 'plays nice' through a different speaker, it's confirmation that something's wrong with the original one.

Removing a speaker from a small cabinet can be problematic if there are obstructions. Sometimes, you have to take valves out to clear a path and on occasion, the whole amplifier section needs to come out. Remember the speaker is placed over four bolts that protrude from the baffle.

That might not be of much concern when you're removing a speaker, but it's all too easy to punch a hole through a cone when you're putting a speaker back in and you can't really see what you're doing. Punching a hole in a brand-new speaker is a sickening experience and please don't ask me how I learned that lesson.

Okay, you've removed the four bolts and all the washers and pulled out the speaker. Let's say it's working but sounding raspy, so take a close look at the cone. If you can see any rips or tears, you may actually be able to fix them. Speaker cones are paper, so you can make patches using PVA glue and tissue paper or kitchen paper. If you're using two-ply kitchen paper, split the layers and only apply single layers with the glue.

Speaker cones need to be stiff, so it's okay if a cone patch dries hard. However, repairs around the outer edge need to remain flexible, so silicone sealer is preferable. If you use the black stuff, you might even achieve an invisible repair, but be sure to allow it to dry overnight before testing the speaker.

Sometimes, old speakers begin to sound too loose and flubby when you hit them with low frequencies at high volume. You can add a bit of DIY doping by painting some contact glue around the outer edge. Let it dry thoroughly and your speaker's low-frequency response might tighten up.

These workarounds can sometimes tide you over until you can afford a re-cone or a replacement speaker. Some of these fixes are so effective, they may even become permanent and I've known patched speakers that have carried on working for years. Get this right and you may save yourself unnecessary expense.

Unfortunately, speakers that still produce sound can have other issues that can't be patched up. If the voice coil is rubbing against the side of the gap or the spider has detached from the speaker frame (aka basket), the only options left are to re-cone or replace.

WHAT'S HAPPENING?
A speaker is broken or completely blown

WHAT YOU NEED
A soldering iron and solder, a pliers or socket set, tissue paper, glue, a mulitmeter and a nine-volt battery

1 These old ELAC speakers have certainly been patched up a few times and they're still working – just about...

2 You can use a nine-volt battery to test whether a speaker is working. We're using battery-clip wires, but you can just touch the battery terminals against the jack plug or the speaker terminals instead

3 Guess what happened to this speaker. That's right – the cone got spiked by a speaker bolt, so be sure to line things up carefully when you're performing an installation

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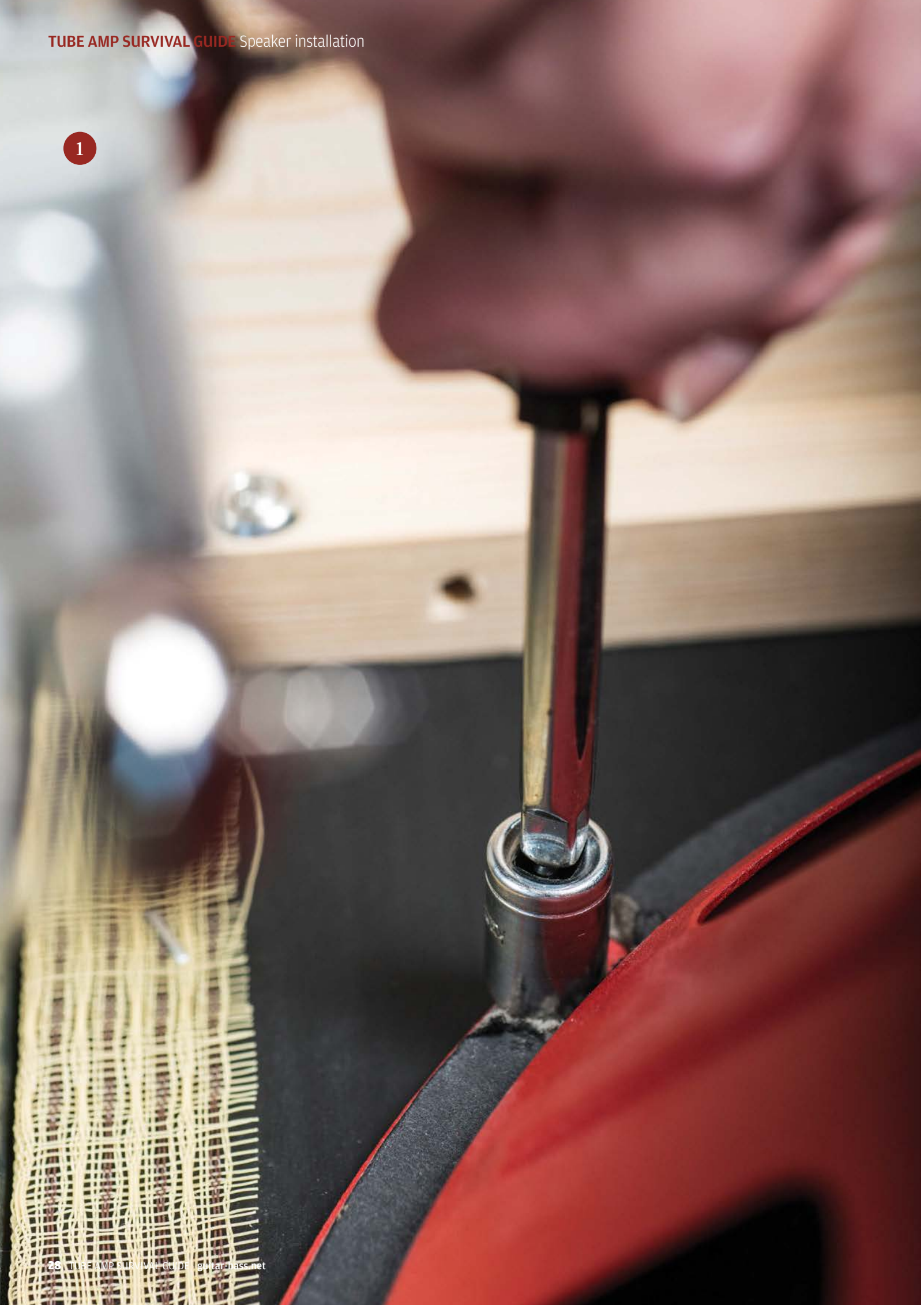

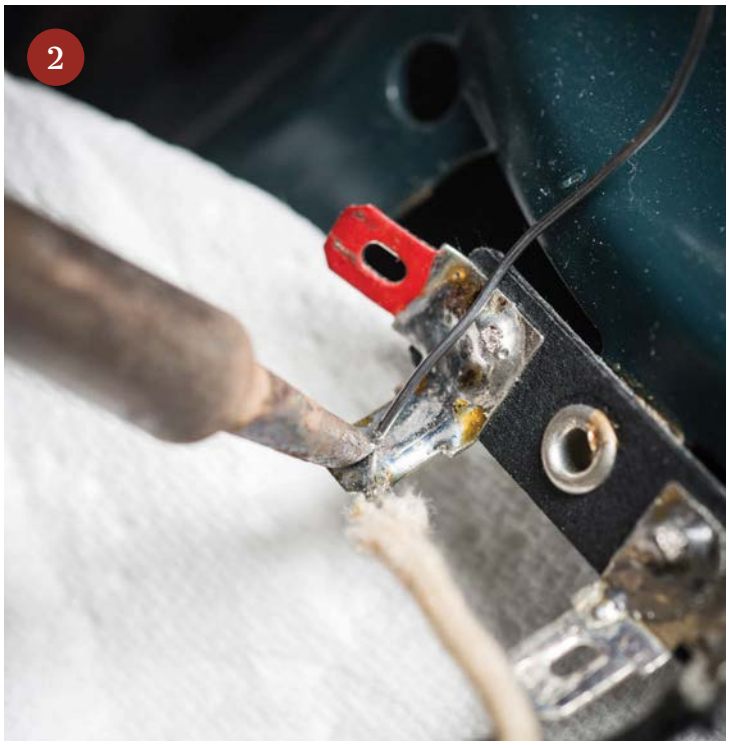

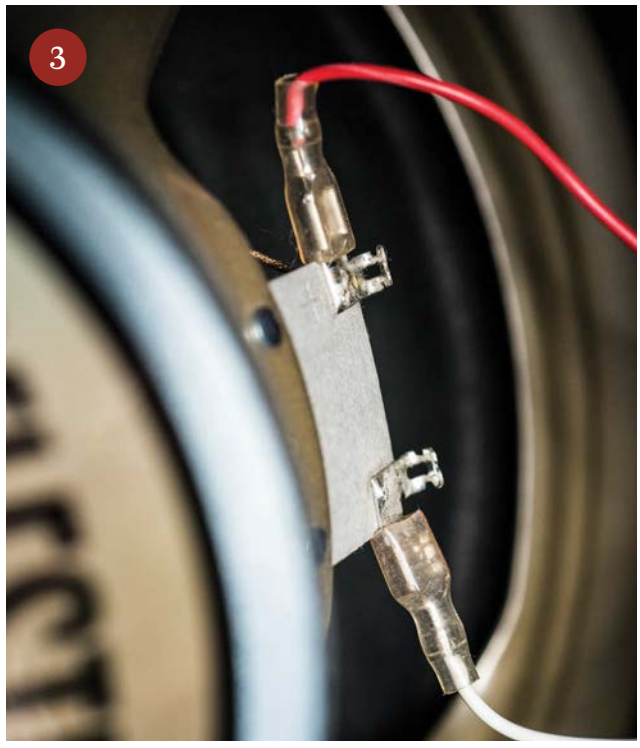

8. Speaker installation

If you have always liked the stock speaker, then you may as well have it re-coned. Lots of vintage-amp owners choose to do this to retain the amp's value, even when there are louder or better-sounding modern alternatives. But hey, they probably prefer their 50s amps ungrounded, too, and it's an owner's prerogative after all.

Regardless of whether you're re-coning or replacing a speaker, you must maintain the correct impedance. If your amplifier requires an 8-ohm load, make sure that you use an 8-ohm speaker or specify 8 ohms to the person doing the re-cone.

If you combine two 8-ohm speakers in series, the resulting load will be 16 ohms. Similarly, two 4-ohm speakers in series will provide an 8-ohm load. Two 8-ohm or 16-ohm speakers wired in parallel provide 4-ohm and 8-ohm loads, respectively. It's not a difficult equation to get right, but your amp's long-term health depends on it.

To reiterate, it's important not to over-tighten speaker bolts, because it can cause the speaker frame to bend out of shape. Instead, slip one of those gnarly looking lock washers over the bolt and only snug the nut up finger-tight.

Observing speaker polarity is also important – particularly when you're mixing speakers from different manufacturers, or if one speaker has just been re-coned.

Basically, this means that you have to pay close attention to which terminal is positive and which one is negative.

If you connect up two speakers with opposite polarity, you'll get an odd phase-y sound, with lots of midrange cancellation. If you're an early Peter Green fanatic, it's a very good way of getting that sort of tone. The downside is that it's the only sound you will get.

Unfortunately, the markings are not always present, especially on vintage speakers – and even when you can see a red marker or a plus sign to designate the positive connection, it cannot necessarily be relied upon.

So if you are trying to ascertain the polarity of a speaker, it's time to reach for that nine-volt battery again. Place one finger lightly on the rear of the speaker cone and touch the battery terminals to the speaker terminals – negative to negative and positive to positive.

If the terminals don't line up, attach a battery clip to the battery and touch the wires against the speaker terminals.

You will hear the pop sound we discussed in the speaker-testing section, but by placing your finger on the cone, you can feel if the cone moves away from your finger or towards it. When positive touches positive, the cone should move forward – i.e, away from your finger. If it moves towards your finger, you'll know the positive and negative connections should be reversed. You can then mark the terminals accordingly.

If you're installing two speakers, or maybe four in a Bassman-style amp or a Marshall-style cabinet, each and every speaker should be tested in this way to identify the positive and negative connections.

With this task completed, it's time to connect up the speakers. Some people use spade connectors with push-on speaker terminals. Personally, I prefer to solder the speaker wires to the speaker tags because this minimises the possibility of a cable pulling loose, which could endanger the amp.

Just take care when you're soldering that molten metal doesn't drop onto the cone. To be safe, scrunch up some paper towel and stuff it under the terminals before you solder the connections – and do remember to remove it once you're done.

WHAT'S HAPPENING?
You're installing a repaired or brand-new speaker

WHAT YOU NEED
A soldering iron and solder, a pliers or socket set, tissue paper, glue, a multimeter and a nine-volt battery

1 When tightening speaker bolts, finger-tight is fine. If you over-tighten with a spanner or socket, you may distort the speaker frame

2 Soldering the speaker wires onto the speaker tags provides the most secure connection. Note the paper towel under the tags, to catch any molten solder drops and protect the speaker

3 Spade connectors make speaker swapping quick and easy, but they can come loose if you store stuff in the back of your amp – and running a valve amp without a speaker connected can be very bad for the amp

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